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AND AMERICAN GARDENER'S MAGAZINE.

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D. K. MINOR, Proprietor.] FOR OCTOBER, 1834. [SAMUEL FLEET, Editor.

ORIGINAL COMMU NICATIONS.

Labor favorable to Health—Mangel Wurtzel—Benefits of Temperance. By W. K. Townsend. To the Editor of the New-York Farmer.

Dear Sir,—Your much esteemed Farmer of the 1st inst. has come to hand; * * * you will continue to improve if you will continue the hard work on the farm; there is no *doctor's stuff* equal to that for me. I have never worked so hard as this past season, and never enjoyed so good health. We commenced haying as early in July as our grass would do to cut; I have now secured in prime order ninety nine ox team loads, and shall to-morrow cart in the last four loads, which will complete my first crop. My corn and other crops are all doing well; the dry season has not affected my crops as much as in some parts, as my land is more of a damp quality than most land in this region, and stands the drought better than the dry or sandy soil. I have a field of yellow turnips, and also some white, that we sowed about the 15th to 20th of July, for my stock, that are doing remarkably well. The present rain will, I think, ensure a good crop of those valuable roots. My mangel wurtzel, the seed of which I had of you, have grown well, notwithstanding the want of showers, and now promises to be a large yield. I am every season more and more convinced of the value of this crop to farmers, like myself, that winter a tolerably large stock. This is my fourth season of cultivating them, and I mean in future to increase the quantity three fold. I took off my crop last fall in season to seed down the field with rye and grass. The crop of rye was excellent, and the grass is now equal to that in the same field sowed after a crop of early potatoes. I do not believe they exhaust land more than any other root crop; if the land is well prepared, and the seed sown at the proper time, two good hoeings are sufficient. I have this season gathered the under leaves for my hogs, and they will eat them as soon as any thing that I give them. I do not think the crop is injured by taking them off. As my early beets did not come to perfection, we used the mangel wurtzel, taking out the smallest, when two grew together, in their stead; and if well cooked and peppered, for the table, we think them as good as beets. I usually raise them to feed out after my turnips are gone in the spring; my milch cows do well on them, as well as other cattle, and I want no better feed for my breeding sows and store pigs along early in the spring, before they get a good bite of grass.

I hope you will manage on the principles of temperance; go the whole of the temperance constitution; neither use nor furnish ardent spirits in any quantity, or allow it fetched on your premises, and, my word for it, you will find it one of the best reforms ever introduced amongst our agricultural men. I have practiced on the entire abstinence principle for the last six years, and with the banishment of strong drink from my premises, almost all my troubles and vexations have gone. I have this season, besides securing our hay and grain crops, and cultivating almost every variety of smaller articles, gathered and hauled stone, and built several strings of wall, and made a considerable of ditching, besides repairs, and other necessary business, which has employed from four to eight hands almost constantly; and I will venture to say, not one glass of ardent spirits has been drank by one of us. The men have worked early and late, and during the hottest days no one complained—no noise, or disputing, no abusing the cattle, or breaking tools, or difficulty, or trouble, occurred among us. In paying off my day laborers, a few evenings since, an old man of sixty years, who has until a few years since been a moderate drinker, but is now an entire abstinence-man, remarked: "Your hay and grain are now about completed, and a good crop it is; and we have neither upset or turned over a load, or injured any thing, this season; and I never enjoyed myself better a season in my life, and have not really felt tired or had pains in my shoulders or back but two nights this season. I have felt just as well when I went home evenings as I did in the morning." This man lives a mile and a half from me, and has come daily to his work, and returned at evening, since early last March. Last year he was one of my constant day men, and when the season was past and winter set in, he had about one hundred dollars in specie in his chest at home, a thing that would not have been but for the entire abstinence plan; and as the men received their money, they, one and all, remarked, "I shall be glad to help you again whenever you want." There is no difficulty in getting the very best of men to do all kinds of work on a farm without the use of strong drink. I mean to use all my hands well. They are furnished with molasses and ginger, to put into water in such quantities as they may think proper, and good home-made hop beer, cider in the cellar, that they could draw when they choose; but they have not, I think, drank from it during the season, except a little at dinner and supper. A forty gallon cask was put on the tap at the beginning of the season, and it is not all drawn out yet. In the haying season we always send to the field at ten and three o'clock a basket of cake and cheese as a luncheon. The hands are all cheerful and happy, and it is a pleasure to be with them. Pursue a plan something similar to this, and I will warrant you some pleasure in pursuing your business on the farm. I have six sons, all active, and blessed with good health, growing up to be soon numbered with the business part of the community; I could wish them all to pursue an agricultural business, if they will go on in the principle which I know tends to happiness and usefulness; but if the old practice of farmers, of drinking and furnishing strong drink to laborers, should again prevail, it is the last business I should recommend to them to pursue. I cannot think of seeing that which I have witnessed in former years on farms in time of haying, when ardent spirits were freely drank by the hands, without being sickened at the reflection.

I see by the last number of the Farmer that your Agricultural Fair is to be holden at Harlaem the 23d of October; will you inform me if that is correct, as I notice by the same paper that the society are to meet twice in the year, once in April, and again the last Thursday in October. See art. 4. The 23d I believe is not the last Thursday; I am thus particular, as you know I came last spring to attend the show and there was none held. Provided I fetch down a few cattle, will they be admitted for the premiums, I being a resident of another State? Will there be conveniences for cattle coming from a distance, as to stabling, &c.? Is it probable many cattle will be offered for sale? Will my cattle stand the same chance for being sold as those belonging to your own State farmers? My stock of Durham Short Horns is now increasing pretty fast. I can spare three bulls, and a few part blood cows and heifers. I can fetch along a yoke or two, or more, well-matched working oxen of our native breed, if there would be a chance for disposing of them at good prices. I wish a little information in these matters. Please write without delay.

I remain, very sincerely, your friend,
William K. Townsend.

Prospect Hill, Sept. 5, 1834.

Remarks.—The above is extracted from a private letter, the publication of which will not, we trust, be displeasing to Mr. T., nor without interest to the public. The 23d of October comes this year on the *fourth* Thursday, the day of the Fair. The privileges of sales at the fair will be equally open to all from any part of the Union; but in reference to premiums, no decision has yet been made. We hope Mr. T. will bring on all that his public spirit and interest will prompt him.—[Ed. N. Y. F.]

Climate and Position of Cape Florida. By H. Perrine, U. S. Consul at Campeche. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Fleet: Sir,—Having just received your March number, I observe the inquiries of Mr. Church, respecting Cape Florida, with your replies, annexed on the 71st page.

As my former pupil, Dr. M'Kinney, has probably arrived at New-York, after visiting

the Cape on my behalf, I trust that he has communicated to you much information concerning that most interesting section of the territory. On account of its climate and position, whatever be the nature of the soil, I will concede, for the moment, that the shores and the interior of the country, near Cape Florida, are as sandy and poor as your own Long Island—[we shall expect the Dr. to make an apology for this—Ed.]—and will limit my observations to a surface of six miles square. Be that surface ever so sandy, or ever so stony, its climate and its position render it the most desirable residence in the world. You are accustomed to suppose that hot and tropical climates are nearly synonimous terms; and that, as in travelling from Detroit to St. Augustine, the number of hot days become greater, and of cold days become less, that the same rule should extend in proceeding southward, from St. Augustine to Cape Florida and Cuba. The fact is, however, that there is no analogy whatever between the *hot* climates of the miscalled temperate but really variable zone, and the *warm* climates of the tropics, or slandered torrid zone. Our northern states have a long cold snowy winter, and our southern states a short cold rainy winter; and both divisions, the great vicissitudes of temperature common to all parts of the changeable zone. But Southern Florida and Cuba, and all regions with a tropical climate, enjoy a long warm dry season, from November to June, a wet refreshing season during the hot dry months of the northern summer, and a uniform temperature throughout the year. The climate of St. Augustine has a much greater resemblance to the climate of New-York than to the climate of Cape Florida. It is strange, but not less strange than true, that within a hundred miles an entirely different kind of climate commences in Florida at 28° N. latitude, and extends across the equator to 28° S. latitude, forming a broad belt of the world 8 or 9 degrees wider than the space included between the astronomical lines of Cancer and Capricorn. And happy for us Americans is the fact that the uniform climate of the tropics extends north of these astronomical boundaries into our own soil, and under our own government. At Cape Florida, then, we have all the phenomena of a tropical climate—the warm dry winter, the wet refreshing summer, the grateful sea breeze by day, and land breeze by night, and the steady trade wind from the east, with uniform temperature throughout the year. As if to guard a peculiar equability of the temperature to this favored spot, Nature has conducted a regulating stream of hot water from the Equator along its eastern shore, and has made the surface of southern Florida both level and narrow. As the gulf-stream is never below 84° in these latitudes, the trade wind which passes over it must always be elevated in temperature, and as tropical Florida is neither broad nor high enough to disturb its equatorial influence, it is superior in this respect to the wide peninsula of Yucatan, and the elevated Islands of the West Indies.

In the uniform temperature or tropical climate of Cape Florida, vegetables will yield the greatest possible products with the least possible labor, in the poorest possible soils; and the cultivators will enjoy the greatest number of comforts with the greatest amount of health, without any of the necessities caused by that great enemy to health and happiness—cold! In northern climates, it is admitted that the greater portion of plants derive their principal nourishment from the soil, notwithstanding the phenomena resulting from the sprinkling of gypsum, &c., indicate that they may feed on air. But in these climates, favored equally by the sun throughout the year, the greater number of the native vegetables will flourish in air alone. All the valuable species of the extensive families of the Bromeliaceæ and Cacteæ will continue to grow even when suspended by a cord in the atmosphere, and many spurn the earth in which they spring as soon as they reach a tree or a wall to elevate themselves above their humble fellows. As soon as the Cactus triangularis becomes attached to the sides of the stone house, or fence, near which it is planted, it suffers its terrestrial roots to perish, and climbs to the very top, nourished by its aerial mouths alone, and these display its magnificent flowers, and its luscious fruit, called the pitahaya, or strawberry pear. As to pine apples, you know that the sterile Bahamas afford the finest in the world, and you will recollect what the Rev. Walsh says of their abundance on the sandy shores of Brazil, "On the sea-shore, near the mouth of the harbor, (of Rio Janeiro,) is a long sandy district, entirely covered with pine apple plants; and here I rode one day nearly *three miles* through a pine apple garden." You will also remember that the hemp agave is flourishing on the sandy sea-shore of Sisal. Your intelligent correspondent, E. J. D, at page 105, of your first volume, for 1828, tells you that the tea plant flourishes on a sandy plain of Rio Janeiro, in a still lower latitude than Cape Florida. In short, all the luxuries we import from the East and West Indies may be obtained from the most meagre soils, with the least possible trouble, in tropical Florida. The coffee, the chocolate, and the tea, consumed by the family of the cultivator, may be plucked from the shrubs which grow around his dwelling; and the most delicious fruits, which have hitherto never reached our shores—the most exquisite cheremoyer, the unparalleled durion, and the queen of all others, the luscious mangosteen, with thousands yet unnamed, will be as common on the sandy shores of Florida as are peaches on the sandy plains of New-Jersey. But the resident of tropical Florida enjoys many negative advantages from the absence of cold. Its presence in northern climates causes three-fourths of the labor and expense requisite for mere existence; costly houses, to protect the laborer from cold—costly clothing, to protect his body by day, and costly bedding by night—to which must moreover be added costly fuel, or he and his family will still perish from cold. Even costly shelters must be built to protect his domestic animals from cold. What is still worse during the existence of cold, he cannot even preserve his property in a stationary state. He is consuming, his family is consuming, and his domestic animals are consuming, during the winter, the products of their united labors during the summer; and he becomes absolutely the slave of his own animals during half the year. But in the climate of Cape Florida these necessities do not exist: his domestic animals require as little care from him as the vegetables on which they feed; his light and airy dwelling is merely a shelter from the sun and rain, which he can construct in a day; his thin clothing is merely a cheap covering, from the shame of nakedness; his bedding is a simple hammock, or net-work sling, to suspend him in the air; and his fuel is merely the trifling quantity requisite for cookery alone. I repeat again, that in these climates, favored by heaven, the labor of one hour daily will enable a family to live much more comfortably than twelve hours labor every day in the north. Indeed, after the first year of intelligent planting, the labor for subsistence is reduced solely to pulling and preparing for the table. Surrounded by banana plants and cocoa-palms, and the innumerable productive plants of the tropics, with a never-frozen tropical sea before you, and a glorious tropical sky over your head, you find health and happiness, with little labor, on the most sandy shore of tropical Florida.

I may hence again assert that *whatever be the soil*, the climate and the position of Cape Florida enable it to combine more natural and social advantages than any other equal portion of the globe.

I have shown that its climate bears no analogy to the hot and variable climate of our southern States, or of southern Europe. That, on the contrary, its winters are long, warm, and dry; its summers short, wet, and refreshing; its trade winds from the east more steady to the west than in the latitudes nearer to the equator; its sea breezes by day, and land breezes by night, more moderate and regular than those on the shores of *broad* peninsulas, or *elevated* islands, even in lower latitudes; and that, above all, it derives a wonderful uniformity of temperature throughout the year from the Gulf-Stream, which brings its constant heat of 85° from the equator, to be steadily distributed by the trade wind over the narrow surface of tropical Florida.

I have shown that, in this *favored climate*, the most productive tropical plants will flourish in the poorest possible soils, with the least possible labor; that in it exist none of those costly necessities which are caused in our northern states, and even in our southern states, a part of the year, by that great enemy to health, happiness, and wealth—cold! and that, consequently, the emigrant, with the least possible trouble, in the least possible time, can create and collect around him all the varied comforts and luxuries of life peculiar to the tropics throughout the year, as well as the most valuable vegetables of the hotter climates of the variable zone.

I have further shown that, in this *favored position*, all the physical enjoyments of cold climates may be superadded by cheap and speedy exchange; that tropical Florida is the only portion of the tropical zone existing under a free government, and populable by a civilized people; that without canals or rail-roads, it enjoys the greatest facilities for commerce with all the principal markets of America; that hence, emigrants can there establish themselves at the least expense, in the least time, and with the least trouble, and continue to enjoy at the cheapest rates, and in the shortest periods, all the transportable pleasures of their former homes. The frequency and cheapness of intercourse with ancient friends and relatives, in an entirely different and delicious climate, heretofore to be obtained only in distant countries and under different

governments, with great difficulty and expense, must give to Cape Florida the most exalted value in the eyes of those citizens who are experimentally acquainted with all the evils of foreign nations, languages, and laws.

But, above all, its peculiar advantages for a dry warm winter retreat, to the consumptive invalids of all our changeable temperatured States, must give an especial importance to the hearts of every family who has lost, or may lose, a beloved relation, and in vain attempts to find an equable temperature in the southern portions of the variable zone, whether in Europe or America.

Look at the wasting frame, the pearly eyes, and the flushing cheek, of a cherished sister! If you send her to Italy, she will certainly die amid the sudden vicissitudes of its temperature, as thousands have died before. But let her pass a winter in the wonderfully equable temperature of tropical Florida, where she may cool her hectic fevers with the refreshing juices of the orange, the pine apple, the strawberry pear, the cheremoyer, the durion, and, above all, the mangosteen, and she will be restored with health and happiness to your arms in the spring.

Besides the fruits peculiar to the torrid zone, all the celebrated fruits of intermediate climates will flourish throughout the year at Cape Florida. Even the oranges of St. Augustine are coveted at Havana. Figs of every quality may be plucked every month, and, when propagated by layers, will grow on stems not six inches high. In Campeche we have the everbearing grape, which, like the monthly strawberry, gives more or less fruit every day in the year. Pomegranates and passion flowers, of many species, yield their delicious fruits in a degree of perfection to which they can never attain in the south of Europe, in our southern states, or in any section of the hotter division of the variable zone. In Havana, the almond grows with much greater luxuriance than in Spain; and I wish you to recollect distinctly, that the climate is still more temperate or uniform in tropical Florida than in tropical Cuba, or tropical Yucatan. With the most fragrant flowers and fruits above and around you, you may tread the most farinaceous roots in the world beneath your feet, which will, nevertheless, continue to grow for years, until they entirely fill the ground, although you may continue to pull out as many as will nourish your family every day. In such a climate, a family may break off all connection with the rest of the world, and yet combine more enjoyments than can be united at any point of the temperate zone by commerce with all parts of the globe. Although I have never read the narrative of Sir Edward Seaward, yet I venture to assert that if his editress was thoroughly acquainted with the phenomena of the climate in which he was placed, she would have enabled him to create an earthly paradise in a few years without any resources from abroad; and had the Island of Juan Fernandez been located below 28°, Defoe could not have truly represented so many necessities for the lonely Robinson Crusoe to overcome. In short, the means of subsistence are obtained with such trifling labor in the broad belt of the world embracing 28 degrees each side of the equator, that the millions of colored natives inhabiting it continue to increase in population, although their indolence and ignorance are so great that they would soon perish in any part of the variable zone. Indeed, the abundant population of all tropical America, at the epoch of its discovery, in comparison with the scanty population of its extra-tropical portions, is not merely a proof of the greatly superior facilities for subsistence, but also of the greatly superior salubrity of the slandered torrid zone.

Nevertheless, as the wants of civilized man increase with his means of supply, the position of Cape Florida constitutes its next principal merit, on account of its proximity to the ports of cold climates, whence all their peculiar products can be speedily obtained in exchange for the special products of the tropics, without the perishing of the most precious fruits of either on the way The pine apples and the mangosteens of the Cape may be sent ripe to New-York, in return for the ripe pippins and peaches of New-Jersey. No canals or railroads are necessary for the settler at Cape Florida, who has the cheaper facility for transportation in the open sea before him to all parts of the world. Relatively to every other section of the United States, the superiority of its position is almost as great as the superiority of its climate. The point of the Peninsula is as conspicuous and central in the federal Union as the point of the nose in the human face. It is equi-distant from New-York and New-Orleans, the great commercial emporiums of the Atlantic and Mississippi States, and is almost within sight of Havana, the great commercial depot for all Spanish America. As I resided in Illinois from 1819 to '24, and in Mississippi to '26, I know the cost and trouble attending the first year of location by emigrants to those States, and I am prepared to prove that a family may obtain much more comfort in dwellings, gardens, &c. in one-third of the time, and at less than one-third of the price, at Cape Florida.

Grafted Fruit—Carbonic Acid Gas. By R. M. W. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Fleet,—Your correspondent "A." informs me that "B." has given an explanation of the tree grafted by the curious gardener with 20 varieties of fruit. I have not seen this explanation, and am curious to do so, for it will be entirely new to me to find that there is a *specific food* for each variety. Perhaps it may be in some of the late chemical writers explained satisfactorily; but until I have seen this explanation, (being an old-fashioned man,) I shall continue to hold fast my faith in the reason and common sense of old writers, and of observation. The idea of "A." about chemical action taking place in the soil, is entirely new, and perhaps derived from some of his late authors, which I should be curious to see, for I must confess I cannot comprehend this chemical action either from frost, water, or air. The editor of the Farmer also broaches some doctrines new to me.

I have been in the habit of thinking that the soil was heavier than carbonic acid gas, and consequently that this gas would rise through the soil to the surface, but being heavier than atmospheric air, would not rise higher unless it was carried away by winds, and the same specific gravity would cause it to settle near the surface, and thus be in the neighborhood of vegetables, be absorbed by their capillary vessels, and assimilated. I believe that water is also heavier than this gas, and that the gas will rise through it unless taken by aquatic plants in its way to the surface; but perhaps I am mistaken in all these views, and, if so, should be glad to be set right. Again, the editor of the Farmer contends that this gas should sink in the soil in order to come in contact with the spongioles of the roots. Now, I have been in the habit of believing that these spongioles, and all other parts of the root of plants, take little, save water, from the earth.

But here, again, Mr. Chaptell, most chemical authors, and myself, may have been mistaken It seems to me that plants derive most of their food by the capillary vessels above ground; and Chaptell, Van Helmont, and others, as well as my own observation, seem to confirm this opinion. Again, Professor Rennie talks very learnedly about the air in water and soil. It must be running water to do any good to upland vegetation. Now I have been in the habit of thinking that water, either running or standing, would be fatal to such vegetation, if spread over the surface: the water being heavier than carbonic acid gas, would prevent its coming in contact with the plants under water, and they must of course dwindle and die for want of food; but here, again, I may have been mistaken. Mr. Rennie's ideas about the proportions of atmospheric air are perfectly correct, viz.: 21 oxygen, 79 nitrogen, 1000th carbonic acid gas. It may be asked why so small a portion of this gas is found on analyzing either earth or air? Obviously because in the earth, as fast as it is formed, it rises to the surface, and in the air it is absorbed by vegetables. When we consider *that all breathing animals* furnish this gas at every *expiration*, and that all substances, whether vegetable or animal, undergoing combustion, or decomposition, furnish this in large quantities, it would appear very obvious that it would abound in the atmosphere, if it were not taken up by the vegetable kingdom. In fact, an all-wise Creator seems to have decreed that the animal and vegetable kingdoms shall mutually furnish the principle of life to each other: the one supplies oxygen for the respiration of animals, while the animal, in breathing and on decomposition, furnishes carbonic acid for the vegetable kingdom. Perhaps I may be mistaken on all these points, and if any of the late authors can elucidate them, I should be glad to be referred to them.

R. M. W.

May 26th, 1834.

Caloric in Ice—Excrementitious Substances of Plants. By A. [For the New-York Farmer.]

Mr. Editor: I am a little surprised at the ignorance of R. M. W. on the subject of caloric, after his having perused so many authors on the science of chemistry. Most of his authors, he says, have taught him doctrines "much at variance with several of my notions. I have been taught to believe that the natural state of water is ice; that on being deprived of its caloric, it is instantly converted into ice; but on again receiving the caloric (which always seeks an equilibrium,) it becomes fluid. Perhaps this is a mistake of my books, and that 'A.' can give a more correct explanation."

I do not know what authors R. M. W. has read on this subject, but I am more inclined to think that he has mistaken their meaning, than that they have asserted that, when water assumes the form of ice, it is deprived of *all* its caloric. When the caloric of water is

so far extracted as to leave it at the temperature of only 32°, it then becomes ice. But are we to conclude that it contains no more caloric, because it takes the solid form at this temperature? Certainly not. Does not R. M. W. know, that water, (which in ordinary cases becomes ice at 32°,) can, by proper care, be reduced as low as 21° without assuming the solid form? [See Turner's Chemistry, p. 51.]

The fact that ice contains caloric, as well as all other substances, is taught in all schools of the present day where the science of chemistry forms a part of the course of study. One of the most common works on the science for the use of schools is Comstock's Chemistry: I will make a short extract from it. At page 11, on the subject of caloric, he says: "This principle seems to be present in *all* bodies, nor is there any known process by which it can be separated from any substance; for since heat constantly passes from the hotter to the colder body, until every thing in the same vicinity becomes of the same temperature, so if we take a substance at a temperature however low, and carry it to a place where the temperature is still lower, this substance would give out heat until its temperature became the same with that of the surrounding air. For instance, if a piece of ice at 32° of temperature could be transported to any place, as in Siberia, where the temperature was 60° below 32°, then this piece of ice would continue to emit caloric until its temperature became only equal to that of the surrounding atmosphere, and it would, therefore, give out 60° of heat."

It is useless to waste any more time on this subject. If R. M. W. will take the trouble to examine Turner, Thenard, Beck, Silliman, and almost any other modern chemists, he cannot fail to be convinced of his error.

As regards the grafted trees, I have only to add what I have already stated in a previous number, that whether the tree be grafted once or forty times, the different grafts select their fixed proportions of the food as it passes through them from the roots in a state of mixture—rejecting whatever their natures do not require; the parts rejected, the excrementitious matter, pass back to the earth. It is a conclusion which science and reason authorizes us to draw, that the proportions taken up by plants correspond to the proportions of the same parts as they are found to exist on analyzation, however fanciful R. M. W. may regard the view. I am no dogmatist, and therefore will allow that I may be mistaken. The subject is a difficult one, and I have not entered upon it with the idea of being able to produce any thing new, but rather to draw information from others.

When we consider the difference between different kinds of fruits, the surprise created by seeing them all growing together on the same tree is removed. Sweet and sour fruits, as we all well know, are composed of the same elements. It is this that characterises all organic substances; the only difference is in the proportions. When we see a variety growing on the same tree, and when we know that the only difference between those which are acid and those which are sweet, is that in the former the oxygen is in a proportion too great for forming water with the hydrogen, and in the latter in the exact proportion for forming water, does not the conception force itself upon us, that the varieties owe their difference to their partaking of the same food in different proportions?

In answer to the 20 different varieties of the curious gardener, it would be impossible to say what the true deposition in the earth would be, because we do not know what substances held in solution by water pass up the roots; but we do know what is retained, because we are capable of analysing. If any thing enters the roots which is not required by the different varieties, it is cast back again. As soils contain various substances which some plants do not, it is very probable that these substances are taken up repeatedly and cast back again.

R. M. W. still thinks that plants take little else than water from the soil, and cites Van Helmont and Boyle as authority. It was once supposed that Van Helmont had established, beyond a doubt, that water was the sole food of plants, but Boyle afterwards disproved the conclusion. But supposing such to be the fact, is it not folly to manure land? Is it not throwing money away, to buy good land for the sole purpose of having a support for plants, (for if water be the only food the earth only serves as a support,) when poor will answer just as well? But your experience must have taught you, ere this, that a good crop depends on the *nature of the soil*. Besides, as I have before stated, plants sometimes contain substances which neither air nor water can produce.

The careful experiments of numerous chemists have fully established the fact that plants absorb, not only water, but all soluble sorts whatever which are found in the soil—water in the greatest quantity. True; because that is the medium through which all other substances are conveyed into plants. The experiments of M. de Saussure, given at large by Thenard, will convince R. M. W., I think, that he is mistaken in supposing that plants take little else than water from the earth. [See Thenard, tome 3, p. 523; also Turner, on the Food of Plants, p. 530.]

Your obedient servant, A.

Brooklyn, August, 1834.

Pruning and Dressing Vines and Trees, in City Gardens. By AN OBSERVER. [For the New-York Farmer.]

MR. FLEET: I trust your readers will excuse my intruding in your columns, on the subject now in question, which may perhaps have some bearing on the public welfare, at the present period. From general observation for some years, on the vacancies belonging to city residences, I mostly found the ground (very properly) converted into small gardens for the purpose of shelter, shade, and ornament, with a grass plat for drying clothes, &c. Such gardens are doubtless, when well attended, conducive to the health of the citizens: but, in some instances, it appears that evil consequences may arise from the *collective* vegetable matter which is created from the leaves of vines, trees, shrubs, &c., which principally occurs from the neglect of pruning and dressing such trees and plants.

These gardens are most generally planted by the sides of walls, sheds, and offices, with *vines*, as the Virginia ncreeper, Bignonia radicans, and the like, which soon cover the walls, sheds and fences that they are attached to, and in many cases encroach on the roofs of houses, and on trees, &c.; hence, such plants are a condensed mass of vegetation, which seems to deprive those citizens of the free circulation of *air*, which might be enjoyed if more openly exposed; this, when duly considered, I think will appear to have an ill effect in hot seasons. The next ill consequence is the fall of the leaf: the leaves of such vines collect between the walls, roof, and gutters of houses, and the like, where they undergo a slow process of decomposition for some months, which certainly has an ill effect in confined situations; and lastly, an heavy appearance is *perceivable* when something enlivening may be expected; to these may be added a nursery and winter quarters to all kinds of vermin, insects, and the like, which would be wholly dislodged by a careful pruning at the fall of the leaf.

I am far, very far, from pointing out or surmising the ill effects that might arise from such dense masses of vegetation in a decaying state, nor am I desirous to remodel what has so long been a custom in cities in various parts of the States: but suggest that were such vines and trees regularly pruned and cleansed in the fall, of their old wood, leaves, and filth, that much good would arise therefrom. AN OBSERVER.

Domesticating the Beaver. By U. [For the New-York Farmer and American Gardener's Magazine.]

MR. EDITOR,—In almost every paper which is issued from the public press, we find something noted as an improvement, which is in some way intended to benefit the community, or to turn to individual advantage. Now, sir, as all animals that are valuable for the fur they yield are becoming scarce, owing to the destructive war that is continually waged against them, it is evident that the value of the fur must be enhanced in proportion to the scarcity of the animal. If, therefore, there can be any method devised to domesticate them, it would be of more importance than almost any new enterprize that could be suggested; and as there have been instances of the Beaver becoming as familiar and gentle as a common dog, I can conceive no good reason why that most valuable animal should not be entitled to the fostering care of man as any other animal; and for this purpose I would propose the following method: Let there be an enclosure, of from one to five acres, made so as to be secure from dogs or thieves, having a brook passing through it. Plant the enclosure plentifully with that kind of shrub or tree that the beaver uses for food, or for building his habitation. Commence by procuring two or more young beavers of different sizes, which being already familiar with human society, and the enclosure being closely connected with the dwelling house, the animal would never become wild; and as they breed rapidly, the number would soon become very considerable; and if they could not be made to yield their fur without destroying their life, they might be bred in such numbers that they might supply our market with beaver fur as well as it is now with wool from the merino sheep, and make it a much more profitable business if entered into with spirit by a company.

Sir, I wrote the above article some time last winter; but after reading it over I thought it too faulty for the public eye. I laid it by, and thought I would read and let others write. But in the New-York Weekly Messenger and Young Men's Advocate, I

noticed a piece headed Extinction of Animals, which, after showing that the fur seal and some other animals have become almost extinct in those islands discovered since the year 1771, goes on to show that they must eventually disappear entirely from all parts where man shall continue his present mode of procuring the fur of animals, which is by the indiscriminate slaughter of all animals yielding it, which appears to me to be wrong in every sense of the word: so I send you the piece with all its faults, in hopes you will have the goodness to read it and suggest some method to induce some person to interest themselves so far as to get a few young beavers and make the experiment.

U.

REMARKS.—We know of no reason why the suggestions of U. should not be considered important and perfectly practicable. Smaller and less valuable animals than the beaver are bred for profit.—[ED. N. Y. F.]

Visit to Judge Buel's Farm. By MAGNOLIA. [For the New-York Farmer and American Gardener's Magazine.]

MR. FLEET: Sir,—I am aware that to a man of modest worth, it is unpleasant, if not painful, to have his merits blazoned to an unappreciating world; but there are cases in which the public good so far requires it as to afford an ample excuse, if not a justification. With this plea, either in excuse or in justification, as you may think proper to consider it, I take the liberty to present you with a brief communication.

It is well known to every reflecting mind that agriculture is the basis of national wealth and prosperity; and it is, or should be, as well known, that with all our boasted improvements, the agriculture of our nation is at least half a century behind what it ought to be. But if I introduce the subject to any man engaged in agriculture, he generally takes it in dislike, or at least thinks me a fool; and if he is not better acquainted with the principles of politeness than with those of agriculture, he generally tells me so. Speak to him of the advantages which science offers to the profession, and he considers it perfect nonsense: tell him of the extraordinary results which are being produced daily all around him by good management, and he believes it all deception, if not downright lies. He has no faith in book farming.

From these considerations, I hope it may not give offence to present to the public, through your paper, some remarks and reflections which occurred to my mind on a visit which I was politely indulged with the privilege of making, a few days since, at the residence and farm of Judge Buel, near Albany. But, as I religiously avoid electioneering, on all occasions, and as I have since learned that Mr. Buel has been spoken of as a candidate for Governor of this State, I shall say nothing respecting his qualifications for that or any other office, (except that, were the choice left to me, of all men I ever knew he would be my man.) My sole object in this communication is agricultural, not political.

Judge B. is emphatically, and in the strictest sense of the phrase, a *book farmer*. He was bred a printer, and, I believe, followed that business, without having any practical acquaintance with farming, until about ten years ago he purchased the place where he now resides; but which was a piece of waste ground, considered of very little value, being of a very indifferent soil, run over with shrub pines and interspersed with marshes. This piece of ground, which, notwithstanding its location, about two miles from the city, could never, at any time, in its natural state, have been worth more than from twenty to thirty dollars per acre, would now be an object of speculation at two hundred dollars. This same spot, which I have looked at with regret at its dreary appearance, as in former years I have ridden past it, is now, by the "book-learnt skill" of its owner, changed to a scene which a monarch might envy, and a philosopher of the most refined taste might long contemplate with pleasing admiration. In all his plans of operation, and choice in selecting subjects for cultivation, his only instructors have been his own reflections, aided by his well selected library.

I repeat it—it is not my object to draw the public attention to the proprietor, for I know his mind soars above the little mead of public admiration; but to present to the incredulous farmer a scene which shall silence all objections to *book farming*. Here the common agriculturist can see a piece of ground, which ten years since he would scarcely have taken as a gift, advanced in value from its cost, in less than ten years, more than six hundred per cent.; and in this dry and unproductive season, when farmers are cutting and clearing the ground of their withered and unripe corn, he can see a crop of from eighty to ninety bushels to the acre, and every other production of a well cultivated farm yielding in proportion. And not only the agriculturist—the admirer of the beauties of nature may here view and contemplate the productions of every quarter of the globe; the botanist, the horticulturist, and the florist, may here even increase their catalogue of subjects from specimens before them, while the tyro in each branch may improve his knowledge by the scientific and instructive remarks and explanations of Mr. Wilson, the partner and overseer of the nursery and gardens.

MAGNOLIA.

Lansingburgh, Sept. 9, 1834.

Analysis of New-Jersey Marl. By NOVICE. [For the New-York Farmer and American Gardener's Magazine.]

The annexed result of an analysis, by Chilton, of samples of Jersey marl, is communicated in hopes that the publication may be useful. Perhaps some of the scientific correspondents of the New-York Farmer will give their opinions of the relative value of each kind as a manure, and the peculiar soil each is best adapted to.

It would be a satisfaction to some readers of the Farmer to know that the theory of agricultural chemistry, relative to the properties of marl, corresponds with practical results.

NOVICE.

Shrewsbury, 8th mo. 30, 1834.

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No. 1—Silex 60, alumine 3.50, oxide of iron 20, phosphate and carbonate of lime 7, water 10.50 = 101.

No. 2—Silex 59.50, alumine and oxide of iron 25, carbonate of lime 4.50, water 11 = 100.

No. 3—Silex 55, oxide of iron and alumine 30, carbonate of lime 5, water 10 = 100.

No. 4—Silex 58.50, oxide of iron and alumine 25, carbonate of lime 5.50, water 10.50, loss .50 = 100.

No. 5—Silex and alumine 50, oxide of iron 19.50, carbonate lime 20, water 10, loss .50 = 100.

National Agricultural Society at Washington. By H. PERRINE. To the Editor of the New-York Farmer.

MR. FLEET,—You recollect the humble beginnings of our National Bible Society, and of our National Colonization Society. Their present elevated utility affords the greatest possible encouragement for the immediate formation of a National Agricultural Society. If organized during the ensuing December at Washington, with our leading statesmen of all parties for its leading members, its influence will immediately be felt in every section of the Union. The farmers of our old northern States will then speedily commence the cultivation of our native wild plants adapted to their cold and barren region. Our old southern States will as speedily introduce and cultivate the hardy tropical plants, which will flourish in the warmer atmosphere of their most sandy, stony, and sterile soil. It can be demonstrated, that in the pine woods of Maine the sugar maple, and in the pine woods of Georgia the sugar palm, may be cultivated more profitably than the sugar cane in the thick woods of Louisiana: in other words, it can be proved, that with less capital and less labor, more sugar of equal quality can be extracted from the sandy or stony surfaces of Maine and Georgia, than from the deep vegetable moulds of Louisiana. The profits of American farming are not to be calculated by the gross number of dollars obtained from a single acre of land, but by the nett number of dollars produced by a single hand. The truly American system of cultivation must elevate the price of agricultural labor, and the condition of agricultural laborers. They must never become with us the mere hirelings of tenant farmers, as in Europe, to gain a scanty subsistence for themselves while filling the pockets of their immediate and remote masters, the farming capitalists and the lordly land owners. Here the laborer, the farmer, and the land owner, must be numbered in one and the same person. Here every laborer may own his lot of land, planted with the naturally most productive vegetables for the natural climate and soil, to afford a comfortable maintenance, and thus become a really independent farmer. The poor owner of a single acre of hitherto unproductive marshy ground at the north may be shown, that by simply transplanting our native cranberry bushes, or candleberry myrtles, he may obtain a greater nett income for his labor than the wealthy farmer by the laborious cultivation of wheat or corn on highly manured fields. The poor owner of a single acre of hitherto unproductive sandy or stony surface at the south, may be shown, that by merely transferring the exotic cochineal cactus or hemp agave to his lot, he will obtain a greater proportionate reward for his labor than the wealthy planter by the laborious cultivation of rice or cotton on the richest alluvion or blackest vegetable moulds. In short, the people of the northern Atlantic States may learn that it is more profitable to cultivate than to collect the spontaneous productions of their woods and marshes; and the people of the

southern States, that it is more profitable to domesticate new exotics than to continue the cultivation of their common staples. The cultivation of the common staples of the old States, both of the north and south, must be left to the naturally most productive soils of the west and southwest—of the great valleys of the Ohio and Mississippi—which, aided by canals and railroads, can send them to the Atlantic coast much cheaper than they can there be raised, in exchange for the more natural productions of these more sterile soils. A mutual and profitable dependence of each section on the other will be thus created, and the peace and prosperity of the Union will thus be most effectually preserved. Very respectfully,

H. Perrine.

Consulate U. S. A., Campeche, 7th June, 1834.

Lady Montague's Taste for Rural Pursuits. By C. F. [For the New-York Farmer and American Gardener's Magazine.]

Having a desire to unite my feeble efforts in advancing so laudable a cause as that in which you are engaged, and feeling the force of the old proverb,—"example is more powerful than precept,"—I shall give you a short account of Lady Montague, taken from her letters, and shall quote some passages, to enable your readers to form a better opinion of the interest and pleasure a lady in high life, and of superior mind and education, whose society was sought by all the great and the noble, took in rural pursuits, even at an advanced age, when obliged to reside in distant countries, separated from friends.

Lady Montague was a native of England, where she married. Her husband was ambassador to several powers of Europe, to which she chose to accompany him for information, from whence she writes her friends an account of her travels, and manner of spending her time. Sometimes we find her visiting all the public places of amusement and gaiety, or exchanging visits with those in the higher ranks of life—at others alone with her domestics—in a cottage, diverting her mind by reading or attending to her garden, poultry, &c.

In one of her letters, speaking of Hague, she says, "The whole country appears a large garden: the roads are well paved, shaded with trees, and bordered with large canals, full of boats passing and repassing. Every twenty paces gives you the prospect of some villa, and every four hours that of a large town, so surprisingly neat I am sure you would be charmed with them. The place I am now at is certainly one of the finest villages in the world. Here are several squares finely built, and—what I think a particular beauty—the whole set with thick large trees."

Dining with some in the first or highest rank at Vienna, she remarks, after describing how the dinner was served, "But the variety and richness of their wines is what appears the most surprising. The constant way is, to lay a list of their names upon the plates of their guests, along with their napkins; and I have counted several times to the number of eighteen different sorts, all exquisite in their kinds."

Of Adrianople she says, in April, 1717, "I was certainly assured that the quantity of wine, last vintage, was so prodigious, that they were forced to dig holes in the earth to put it in, not having vessels enough in the town to hold it. Vines grow wild on all the hills; and the perpetual spring they enjoy makes every thing gay and flourishing."

"For some miles round Adrianople, the whole ground is laid out in gardens, and the banks of the rivers are set with rows of fruit trees, under which all the most considerable Turks divert themselves every evening: a set party of them choose out a green spot, where the shade is very thick, and there they spread a carpet, on which they sit, drinking their coffee, and are generally attended by some slave with a fine voice, or that plays on some instrument. Every twenty paces you may see one of these little companies listening to the dashing of the river; and this taste is universal. I have often seen the gardeners and their children sitting on the banks of the river, playing on a rural instrument. The young lads generally divert themselves by making garlands for their favorite lambs, which I have often seen painted and adorned with flowers, lying at their feet while they sung or played; these are the ancient amusements here, and as natural to them as cudgel-playing and foot-ball to our British swains. These gardeners are the only happy race of country people in Turkey. They furnish all the city with fruit and herbs, and seem to live very easily. They are most of them Greeks, and have little houses in the midst of their gardens."

Speaking of Constantinople, she says, "the climate is delightful in the extreme degree. I am now sitting, this present fourth of January, with the windows open, enjoying the warm shine of the sun, while you are freezing over a sad sea-coal fire; and my chamber is set out with carnations, roses, and jonquils, fresh from my garden."

To her daughter, the Countess of Bute, she says, "I find more sincere pleasure with my books and garden, than all the flutter of a court could give me. At present, as the old song says,—

'All my whole care,
'Is my farming affair,
'To make my corn grow, and my apple-trees bear.'

"My improvements give me great pleasure, and so much profit, that if I could live a hundred years longer, I should certainly provide for all my grand-children."

"Since my last return to Italy, which is now near seven years, I have lived in a solitude not unlike that of Robinson Crusoe; except my short trips to Luvere, my whole time is spent in my closet and garden, without regretting any conversation, but that of my own family."

"I have been these six weeks, and still am, at my dairy-house, which joins to my garden, which is my greatest amusement, it being now troublesome to walk or even go in the chaise, till the evening. I have fitted up in this farm-house a room for myself, that is to say, strewed the floor with rushes, covered the chimney with moss and branches, and adorned the room with basins of earthen ware—which are made here to great perfection—filled with flowers; and put in some straw chairs, and a couch bed, which is my whole furniture."

"My garden was a plain vineyard when it came into my hands, not two years ago, and it is, with a small expense, turned into a garden. The Italian vineyards are not planted like those in France, but in clumps, fastened to trees planted in equal ranks—commonly fruit trees,—and continued in festoons from one to another, which I have turned into covered galleries of shade, that I can walk in the heat without being incommoded by it. I have made a dining-room of verdure capable of holding a table of twenty covers; the whole ground is three hundred and seventy feet in length, and two hundred in breadth. You see it is far from large; but so prettily disposed—though I say it—that I never saw a more agreeable rustic garden, abounding with all sorts of fruit, and producing a variety of wines. I believe my description gives you but an imperfect idea of my garden. Perhaps I shall succeed better in describing my manner of life, which is as regular as that of any monastery. I generally rise at six, and as soon as I have breakfasted, put myself at the head of my needle-women, and work with them till nine. I then inspect my dairy, and take a turn among my poultry, which is a very large inquiry. I have at present two hundred chickens, besides turkeys, geese, ducks, and peacocks. All things have hitherto prospered under my care; my bees and silk-worms are doubled, and I am told, without accidents, my capital will be so in two years' time. At eleven o'clock I retire to my books: I dare not indulge on that pleasure above an hour. At twelve I constantly dine, and sleep after dinner till about three. One evening I walk in my wood, where I often sup; take the air on horseback the next; and go on the water the third." C. F.

Vegecultural Economy.—Corn, Cassave, and Bananas. By H. Perrine. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Fleet,—You have said that in the United States we have not yet learned the immensely productive power of one perfectly cultivated acre.

I reply, that I hope the time will never arrive when the American cultivator shall be under the necessity of extracting the greatest possible produce of any single vegetable from the least possible ground, with a greater proportionate share of capital or labor. The great object of American vegeculture is to obtain the greatest value with the least labor and capital, and the consequent great happiness of our agricultural labors is the relatively high price of their industry, which I devoutly desire may never be diminished by imported systems of European agriculture. The dearness of ground, and the cheapness of labor, combine to make the European landlord desirous of obtaining the greatest possible number of roots or of grains from the least possible number of perches or of acres; while the cheapness of land, and the dearness of labor, combine to render the American farmer desirous of obtaining the greatest number of roots or of grains with the least possible number of laborers or of dollars. Nevertheless, *an economy of surface* may, in many instances, be profitably observed by even the American laboring landlords. His orchard of apple or cherry trees *is* also his meadow or his corn-field, and *may be* also at the same moment his vineyard, or his hop plantation. His hop or his grape vines may be so trained as to augment instead of diminish the quantity and quality of the fruit on the trees which sustain them; and the ground cultivated in maize between them, may have its intervals covered with beans, pumpkins, &c., with a diminution instead of an increase

of the labor requisite to eradicate the gramineous weeds which detract nourishment from the kindred corn. Even the indolent Indians of the torrid zone have discovered that many alimentary roots and fruits of *different natural families* of vegetables may be obtained from the same field at the same time, without impediment to the growth of each other, and with the advantage of occupying the place of the otherwise natural and noxious weeds. Thus the *Euphorbiaceous* Jatropha Manchot being planted, (by simply inserting obliquely short pieces of the stem,) when the *external bud* has shot up 8 or 10 inches into the *air*, the *interred buds* having then begun to branch under ground into cassave roots, the *gramineous* zeamays is next deposited in alternate *holes*, not *hills*; and then between both the cassave and the corn are sown the *seeds* of the *cucurbitaceous* melons, watermelons, pumpkins, squashes, and cucumber; of the *leguminous* phaseolus vulgaris, and other *beans* valued, as with us, for the esculent contents of the pods,—besides those of the *jicamas*, whose principal value resides in their *roots*, (like those of our Phascolus or Apros tuberosa,) of which there are three kinds, and one at least supposed to be a Dolichos bulbosa; and moreover, the roots of the *convolvulaceous* sweet potatoe, and of the *dioscoreus* yam. As they all contribute to form a refreshing shade for the soil, in the whole surface not occupied by the stalks of the cassave plant and of the Indian corn, and at the same time impede the growth of spontaneous weeds, we have thus demonstrated to us, by ages of experience, among the most indolent and ignorant people of the world, a most important practical lesson of American vegecultural economy—*the greatest production with the least toil.*

H. Perrine.

Tropical Vegeculture. By H. Perrine, U. S. Consul at Campeche. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Fleet,—Perceiving that you propose the term *Soliculture* to embrace both agriculture and horticulture, and not finding its signification sufficiently extensive to include the cultivation of the Vanilla vine, &c. I offer the comprehensive name Vegeculture. Within the tropics neither agriculture nor horticulture, practical nor scientific, exist in the sense in which these words are understood in civilized countries. The most ignorant peasantry of Europe, the most stupid farmers of the United States, would laugh at the idea of cultivating gardens and fields without either a spade or a plough. Even in the present semi-civilized state of Spanish America, the method of reproducing maize is so rude, that possibly many of your readers may doubt my sketch of the process in Yucatan. The same space is never planted more than two years in succession. Every field of Indian corn occupies a new portion of the forest. The trees, shrubs, canes, reeds, are cut down by that universal instrument, the *machete*, a long heavy knife, or short thick broad-sword, which every body carries in a leather sheath, attached to a strap around the waist. The logs and brush, (which soon become very dry in the months from November to June,) are burnt as they lay. At the commencement of the showers in the latter month the grains of corn are planted. Each laborer has a little bag of seed corn attached to his breast or hip, and a long pole, (whose lower end is sharpened by the machete,) which is held perpendicularly in one hand. At every step, the pole being left to descend with all its weight, and immediately extracted, a hole is formed of sufficient depth to receive the grains, which are dropped by the other hand, and then covered by the toes, or rather great toe, of the same person. Although I have employed so many words to describe the planting, the operation itself is very rapidly performed. The laborers walk in files, the poles ascend and descend, and the grains are dropped and covered with little change of attitude, and without deranging the order of the procession. Supposing the corn to be planted the 15th June, thenceforward nothing is done till the 15th of October, when, the grain being ripe, the ear is bent downwards to prevent the entrance of water through the husk during the showers of the short remainder of the wet season. The crop may be collected on almost every or any day of the coming eight months, or the dry season. Reduce the whole subject to the fewest words: The woods and reeds are cut and burnt; holes are made with a pole in one hand, and the corn dropped into them by the other hand, and covered by the foot of the same person at the same time; in three months afterwards the ears are doubled downwards on the stalks, and may be plucked and husked at pleasure during any time not exceeding eight months more. And yet these improvident people are frequently in a state of starvation, dependent for supplies of Indian corn on the labor-needing climates of the North. Although they have one species of corn which is entirely mature at seven weeks from planting; and although by watering they could have it in all stages, from planting to perfect ripeness, during every day in the year, yet their prohibitory laws against its introduction from abroad have been suspended almost every year since my arrival in 1827.

The history of this single article of primary necessity for mere existence, will explain the motives for my zeal in behalf of the cultivation of all tropical plants in the United States. The nature of the colored natives of the tropics is as specifically different from that of the white inhabitants of the variable zone, as that of the horse and ass.

Their indolence and inaptitude are properties which characterize them from the cradle to the grave. Why then attempt to rival white Europeans in the culture of the vine, when, by adopting the agave, we can supply even its native cultivators with its liquid and fibrous products at a much less price than they can afford it themselves. Our tropical tobacco, our tropical rice, our tropical cotton, are *profitably* exported to every part of the torrid zone where they can find entrance, either under heavy duties, or the costs of smuggling.

Think you that we shall ever be able to undersell the French with American wine in France itself? Oranges are even now carried from St. Augustine to Havana for sale. Sugar, within a few years, will be exported from New-Orleans to tropical ports. Understand that this is not a rambling prediction. I have *demonstrated* that sugar is now raised in Louisiana at a much greater profit than in Cuba. The cause is found in a few words—*the immense superiority of our people, and of our constitutions, over those of the torrid zone.* It requires years of personal experience to appreciate in detail the enormous inferiority of the inhabitants and governments of inter-tropical countries. Let any of our discontented citizens be doomed to live five years between the tropics, and notwithstanding the paradise of nature around him, he will suffer so much from the beings who inhabit and govern it, that at the end of that period he will return to the United States a doubly contented man, and patriotic member of society. Hence, again I say, cultivate all plants which are at present cultivated, or *rather grown*, only in inter-tropical countries. Tobacco has proceeded from Yucatan gradually to Ohio, and I suppose now to New-York, along Lake Ontario. Have I not seen in your numbers that sweet potatoes of the tropics are beginning to be raised near Rochester. The Peruvian *perennial* Nasturtion has become an *annual*, on its acclimating journey up to Canada. The castor oil plant, (Ricinus communis,) *here a tree* of many years, has, nevertheless, become with us an *annual* plant, to be cultivated in Illinois *much more profitably than the perennial in Yucatan.* And why not convert more *tropical perennials* into *extra-tropical annuals*, to augment the prosperity of our distinguished country. But it really seems that within a few years all public spirit or patriot enthusiasm has been swallowed up by that anaconda of republics, party excitement—so well defined the madness of the many for the good of a few.

H. Perrine.

Consulate U. S. A., Campeche, 15th August, 1834.

Answer to "Mild Day in Mid-Winter." By H. Perrine, U. S. Consul. To the Editor of the New-York Farmer.

Dear Sir—Observing in one of your numbers, as extracted from the Knickerbocker, the beautiful lines entitled an address "to a mild day in mid-winter," a personal friend, who highly appreciates the *climate and position* of South Florida, presented the following answer, dated January 15th, 1834.

ANSWER OF THE "MILD DAY IN MID-WINTER."

I'll tell thee why in my pride I have come,
With my balmy breath to thy wintry home,
Since my journey is short from the tropical clime,
Where I dwell among blooms of the orange and lime,
Where the buds with the fruit and the blossoms are seen
In the forests whose foliage forever is green;
From a part of thy own native land, where the flowers
Always blush with the beauty of evergreen bowers:
'Tis to call thee away from the snows that lie
On thy cold bleak hills 'neath thy northern sky!
There the grass *is not* buried in wastes of snow,
Nor does ice *ever* fetter the rivulet's flow;
There the fawns never, tremblingly, startle nor shrink
From the motionless mass of their chrystaline drink;
But the bright feathered flutterers of unfading groves
Ever breathe into music the tales of their loves.
As a friendly messenger thence I have come
To wing thy bark to my fragrant home,
With the softest winds for my welcome guest,
O'er the glittering waves to my land of rest.
From the frost-bitten regions around us we'll flee
To the palm planted shores of a tropical sea;
Where each night shall unfold thee as bright starry skies
As were spread o'er the site of the first paradise!
And each morn to thy wondering eyes will display
All the glories of ever sunny earth in array,
With foliage, and flowers, and fruits, never told
In the Songs of the Poets or Prophets of old:*
Away then, away to my "Land of Flowers,"
To Tropical Florida's evergreen bowers!!

A Mild Day in Mid-Winter.

* Or, "In the happiest dreams of the Poets of old,"
Or, "In the golden age of the Poets of old."

Suggestion.—*Mr. Fleet:* May a young farmer, a constant reader of your very useful paper, suggest the plan of condensing in one page the work to be done on a farm during the month, thus having at one glance every variety of seed and its best *particular* time of sowing, planting, and harvesting, during the month, including *necessary* vegetables for the kitchen garden; also the kind of manure to be then applied, with any other subject which your extensive reading may enable you to condense, and thus bring *en masse* before the eye. Time,

you know, is valuable, and many doubtless will concur with me in wishing that your paper may make it unnecessary to hunt through other works, or, in their absence, to take a long ride or walk to neighbor somebody's, who, after all your trouble, will perhaps have little to say but, "I don't know," to

A YOUNG FARMER.

REMARKS.—In the volumes of the Farmer will be found suggestions for almost every month in the year. It is difficult for the editor to continue them in successive numbers for every month without repetition. It is our intention, however, to make them from time to time.

NEW PUBLICATIONS.

The Cottage Farmer: containing Plain Instructions for the Management and Cultivation of Land, divided into Suitable Allotments, &c. By EDWARD J. LANCE, Land Surveyor, Author of Golden Farmer, &c.

This is a pamphlet of 30 pages, from the London press. Cottage farms, or rather merely gardens, for laborers, have occupied much attention of the well-informed and benevolent of Great Britain. The subject is intimately connected with that of making provision for the poor, the number of which in our country is, in comparison, infinitely small. We make a few extracts, not inappropriate to the farmers of this happy, and, we trust, ever free Union of States.

As the earth is the primary source from whence we draw our needful supplies of animal and vegetable food, it is of the utmost consequence that we should understand the qualities of its surface, so that we may thereby be enabled the better to command and vary its application for the purposes of agriculture.

The soil we cultivate consists principally of three earths, even when they are intimately united as a loam, a marl, black vegetable mould, the alluvial soil of our marshes, or deposits in valleys from the runnings of water; and these three earths are, *sand, clay,* and *chalk,* or lime, in union with an acid. The color of the soils is caused by the rust of iron, or some other metal of minor importance. A white sand, a white clay, or lime, has therefore but little metal in it.

The rich and fertile soils have always the three earths in intimate union, with the black or the red rusts of iron; and these soils, when so mixed, suffer the least under the scorching rays of the summer sun; because the moisture, which is emitted and dried up during the day, is obtained again at night from the dews; the chalk in the soil, being greedy of moisture, imbibes it, and by an extensive power keeps it longer than any other soil will do. Those soils which have not this union require more labor to be bestowed on them, to obtain food for vegetables, which is done by opening the surface to admit the air and moisture to the roots, or the labor is in part superseded by a mineral, or vegetable, or animal substance, being incorporated with the soil, and by that means the moisture is preserved and imparted to the roots of vegetables, as they may require in the progress of their growth.

The effect of all manures is to impart moisture, and their mineral matters, to the roots of vegetables, together with the carbon, or charcoal, and the potash, that may constitute their substance; and these matters must all be dissolved to a watery state before they can be taken up and again distributed throughout the several parts of any plant by means of the roots and fibres which convey the nourishment necessary to support vegetable life.

The fallowing, or exposure of land to sun and air, is a chemical union with the soil, of the gases contained in water and air, for the purpose of imparting them to vegetation, and thereby giving luxuriance: every hoeing is therefore a partial fallowing, and in some measure supersedes the necessity of manuring, particularly in those soils which have a happy union of parts.

The seeds of corn, and also tuberous and bulbous roots, in vegetating, imbibe from the air or from water a gas, which makes them sweet to the taste, as is daily shown in the making of malt from barley; and this material must be supplied continually to the roots of vegetables, or they languish and die. Hence the necessity of removing the surface to keep it from becoming caked, and thereby preventing the admittance of air and water to the roots.

In the absence of a mixed soil, or where there is no spare labor, where the opposite earth cannot be obtained under the surface, or in any part of or near the land we wish to cultivate, then must our wits be set to work, to find out the best food for vegetation, a transient invigoration to the surface; as all other than mineral manures must be continually repeated, the soil losing the concentrated gases imparted to it by manure, and not regaining it without the application of vegetable manures, or of labor by tillage.

The first step to fertility is to drain off superfluous moisture, or by opening the surface to let the earth soak it up. A chalky soil will do this, if trenched, so will an open sand; but a clay must have the water drained off, and by a mixing of sand or road-drift, or what is better than either, clay ashes, the surface may be much assisted for early culture and drainage. In a mixed soil, or in a close sand, a trenching with the plough or spade should be had recourse to, which must be so managed that the best soil is always kept at the top, and not put to the bottom. The ground being opened by such trenching beyond the usual reach of the roots, all superfluous waters will go down out of the way of injury to the plants, and will, by the action of the sun's rays, and by the attractive power of the roots, be drawn up again: thus the moisture, which has been supplied by nature at a former period, will give food when it is wanted,—and thus the powerful aid of the hoe is rendered valuable and effective, and by its occasional application around the vegetation, it will never suffer any crops to languish.

In the absence of sand and lime, and in situations where they cannot be easily obtained for the amelioration of the strong clays, the best substitute is the coal ash or cinders, or the wood-ash; if neither of these can be procured in sufficient quantity, brick rubbish may be collected, and crushed in a road-way; or the clay itself may be slowly burnt into ash, with firing, or pulverized by the aid of lime.

Another excellent and cheap mode of enriching heavy land, is by burning sods of surface soil and clay, by means of quick lime, without wood or any other fuel, as practised by Mr. Curwen, of Workington-hall.

"Mounds of seven yards in length, and three and a half in breadth, are kindled with seventy-two bushels of lime, thus: First, a layer of dry sods or parings, on which half the quantity of lime is spread, mixing sods with it; then a covering of eight inches of sods, on which the other half of the lime is spread, and covered a foot thick with other sods; the height of the mound being about a yard.

"In twenty-four hours it will take fire. The lime should *be immediately from the kiln.* It is better to suffer it to ignite itself, than to effect it by the operation of water. When the fire is fairly kindled, fresh sods and lumps of clay must be applied, where it is likely to flame out. I should recommend obtaining a sufficient body of ashes before any clay was put on the mounds.

"I have just completed paring with the skim coulter plough, twenty-six acres of clover lea, of the second crop, which I intended next year for turnips. The sods were well broken with the harrows, which freed them of the greatest part of the mould. The residue was burnt, and has afforded me above a thousand single horse carts of ashes.

"There are twelve mounds, with seventy-two bushels each. One fire, properly attended to, would have burnt the whole. This was not deemed expedient, as the increased cost of cartage of the sods would, by far, have exceeded the expense of the additional lime; besides that, every bushel of lime so employed has been found more than twice as beneficial to the land as that made in the usual way."

For very light lands, burnings of the soil should never take place; on the contrary, clover leas and stubbles should be buried in the soil to rot and retain moisture; and parings of heath, weeds, and every thing that can be collected, should be dried and laid under cows, pigs, or sheep, to absorb and collect all the moisture that they make, which, being rotted in the dung-pit, will produce an abundance of manure, of a kind best calculated, with the exception of loam, for all light lands.

A plot of ground possessing a good depth of soil, and being of a mixed nature, having an industrious occupant, will always yield a crop without much manure. Many marsh, alluvial, and marl soils, never have other manures than air and water, by the process of fallowing.

But as there are many single mineral soils, as clay, chalk, or sand, and many only partially mixed,—as there are also many idle fellows who do not like work,—and many places where sufficiency of laborers cannot be obtained,—we must point out how the farmer, so situated, may leave the corn to itself for nine months after sowing; his land being, according to the present practice, impregnated with millions of insects in union with the dung, which he has been informed, and believes, will force a crop; and, in consequence of this opinion, he sows three bushels of seed, one of which only being required to grow, the other two go to feed the insects, operating also as a manure to the ground. Seeds that vegetate and come up close together, choak one another; contending for mastery, the most healthy overtops and takes the principal nourishment from the soil.

Manures, which stand next to the mineral mixtures of sand, clay, and chalk, are *potash* and *carbon,* which may be obtained in a mass, cheaply and readily, by digging a hole, paving the bottom, and by putting into it all weeds and refuse vegetables, and occasionally a layer of quick-lime, refuse water from the house, particularly soap-suds, (*which contain potash,*) chamber ley, refuse from the pigs, cows, slop-pail, &c.; these will, in a few months, be so decomposed and enriched by the aid of the lime, that a mass of *potash* and *carbon* will be obtained, and these are the origin and basis of all vegetables.

An accumulated mass of manure should never be allowed to have the liquor run away from it, for it is its very essence, *its potash,* (*a piece of wood can have its potash washed out by continual running.*) All dung-heaps, therefore, should have an earth under them, of a different nature to the soil which they are intended for, as a dressing; for example, if we desire to enrich a heavy clay soil, we must have sand or road scrapings, and a little lime, if it can be procured, laid under each dung-heap; and if we desire to enrich a sandy soil, we must lay chalk and marl, or chalk and clay, under our dung-heaps. For the husbanding of manures and their increase, let all animals be kept with a sand, or other earth, under their litter at all times, to soak up the moisture; a turf might be lined over a stable, cow-house, or pig-pound, and removed every week, and thus would a great accumulation of vegetable stimulus be obtained, and this indeed would be a *husbandman-like* process—a gathering of gold.

To obtain food is the first consideration of mankind; *bread* is the main object, and *one-eighth of an acre* is ample space to supply what one person wants for the whole year; but then great industry in the cultivation is required, and that must be directed by intelligence.

In the early stages of society, when men

were in a barbarous state, the earth's produce was consumed in a simple form,—the springs supplied the drink; the spontaneous fruits and berries, their principal food; these were eaten, or laid up in store as guided by the instinctive feeling of want, and man's time was then wholly occupied in procuring sustenance for himself and family. When he depended on the chase for a living, one hundred acres were hardly sufficient for him; now, by the aid of improved cultivation, by intercourse, and by the intelligence of the community, four persons may be kept upon one acre of ground of a medium quality, and that by the labor of one industrious man. This it is which gives rise to an accumulation of property; and this tells us we are but yet at the threshold of agricultural knowledge—information of the structure of the earth, and of vegetable food, is but just being made known—the brain of man has been laying fallow as to these crops; we will till it, sow some seed, and hope for a hundred-fold produce.

One pound of *bread* each day will be equal to the weight of *six bushels of wheat* for the year, viz. 365 lb.; but when made into bread, it will have increased one-fourth more in weight, so that 4½ bushels of flour from the eye of the mill, (undressed,) will be sufficient for the supply of one individual for a year; an acre producing, by a little attention to culture, 8 times 4½, equal to thirty-six bushels, then will eight persons be supplied with bread from one acre; but we have endeavored to show that much more may be grown by bestowing more labor on the culture; that half a bushel of seed may be made to produce one hundred fold, instead of twelve fold, then shall we have fifty bushels from the acre. (More than this can be obtained, for Mr. Colgate, of Chevening, in Kent, grew this year, 1832, sixty bushels to the acre; see also what has been done by the author of this paper, and exhibited at Charing Cross.) Then 4½ bushels being the consumption of one person, the value being 7*s.* per bushel, the expense of corn per annum will be 1*l.* 11*s.* 6*d.*, independent of the labor of converting corn into bread, which we may consider can be performed by a farmer's family, at their leisure, or as necessity requires. But this value of 1*l.* 11*s.* 6*d.* may be much reduced by using half *rye flour*, which makes a sweeter and better bread. Rye is half the price of wheat, so that bread for a year will cost only 1*l.* 3*s.* Preparatory to making bread, let a portion of the coarsest bran be sifted out of the flour; this bran, boiled in water or milk, and the liquid used for wetting the flour, then will the sweetest and most wholesome bread be made. It is proper for good digestion, that a portion of the earthy matter of the grain be with the bread—the earthy matter is in the bran, and the lime is in the starch.

The Live Fences around the Land should be kept clear of weeds, their accumulation will be a manure when they are decomposed; foul hedges also harbor birds, which consume the crops, and, moreover, the grasses nurse the seeds of the fungi, which attack the corn crop at particular seasons, and produce the red rust, or blight.

Live fences, in the best cultivated districts of Scotland, called the Lothians, are kept as perfectly free from weeds, as in the first gardens of the English gentlemen; they are of hawthorn, trimmed to nine inches wide at the bottom, and four inches wide at the top, and four feet high. Their ditches are only nine inches wide, and kept perfectly clear. If clean hedges and ditches are kept up in the best and most effective state there, at a width of only eighteen inches, why should not our farmers and cottagers keep their fences in the same order, in the same space? What acres of land the farmer would save, by the adoption of this excellent method! What weeds he would prevent blowing over his fields from his foul hedge-rows! It would pay him, many times over, for the two trimmings and the two ditchings to which the above farmers annually treat their fences.

A Drink for Breakfast, or afternoon repast, may be as well made from corn grown in this country, as from berries brought from the Eastern or Western distant regions. Four or six farthings will as well purchase a pound of grain, as twenty-four pence will purchase a pound of coffee. Let Indian or other wheat, or rye, be soaked in warm milk or water for twenty-four hours, then laid out to the action of the air; in a day or two the grain will begin to grow, in warm weather, and this will be the action of imbibing a sugary matter from the air and water; then prepare an iron pan, or a clean frying-pan, by rubbing a piece of butter, (covered over with a cloth,) over the inside of the pan, when it is warm, and placed over the fire. The grain may then be put to cover the bottom an inch thick, and kept moved about until the whole of it is of a reddish brown color; this, when ground, will make a palatable breakfast or beverage, and requires but little sweetening, having been grown previous to the browning. It is made in a tea-pot, exactly like tea, and will drink like coffee, but is much more wholesome. Milk and water make one of the best drinks at dinner or supper, and much cheaper than any other.

Ducks and Geese are not only profitable, but also give an air of comfort and life about a farmyard, and should not be neglected where there is water.

Rabbits are a source of profit, and are very convenient food in a family; they are very prolific, a healthy doe will produce forty or more young in the year, and her first litter will breed the same year at six or four months old. No farmer or person who has a garden, a young family, or conveniences for keeping them, should be without rabbits—but then he should understand the *principle of breeding*; he should know Nature's laws in continuing the species, for if he allows the same family to breed together in-and-in, disease and debility will be the consequence. Even *in fowls*, the *male and female* saved from the same hatching of eggs, if the same cock had given vitality to the eggs, will not be so prolific as if the parents were of a different family. The same law pervades all the *animal kingdom*, and may be evinced particularly with the rabbits; an in-breeding *soon breaks up* the inattentive keeper of domestic animals. (This principle is further elucidated in the Golden Farmer, and in Baxter's Dictionary of Agricultural Knowledge.)

Soap for a Family may be much saved by understanding of what it consists, (grease and an alkali.) *Fat and Soda*, or the base of common salt, will make hard soap, and soft soap may be made by running water through wood ashes, and boiling fat or oil with it, using some lime to neutralize the alkali.

A very serviceable *domestic vessel* may be obtained at the Carron warehouse, Thames-street, for baking, roasting, stewing, brewing, &c. It is an iron pot on legs, with a moving inner bottom to it, a raised cover, and pans of different kinds fitted to the inside; it is used in the Highlands of Scotland for all cooking purposes, surrounded with wood-peat or turf ashes. It is an oven, a roaster, or will boil any thing required for the house or farm: it is best calculated for a fire on the hearth, where it may be surrounded with a uniform heat. In France, where economical cooking is well understood, utensils resembling this iron pot are common.

Alphabet of Scientific Gardening for the Use of Beginners. By James Rennie, M. A., Professor of Zoology, King's College, London. 18mo. pp. 120, William Orr, London, 1833. [Continued from page 268.]

Scientific Principles of Grafting.—When the finger is cut with a knife, the blood vessels soon after contract their cut extremities into an opening so narrow, that the thicker and red-colored part of the blood cannot pass, and the bleeding therefore ceases. But even then there oozes out the thinner watery part of the blood, consisting chiefly of matter the same or similar to the white of an egg, which being thus separated from the rest of the blood, thickens by the heat of the body, as the white of an egg does by boiling. If the lips of the finger-cut accordingly be kept close together by sticking-plaster, they will become united by means of this natural glue, as it may be termed, in little more than a day. Upon the same principle, when I was a student of medicine, I once succeeded, as others have done, in managing to unite the whole tip joint of a finger which a boy had chopped off by machinery; and experiments have been successful in causing the spur of a cock to unite and to grow upon his comb.

It is upon similar principles that the science of grafting is founded; for if a young branch, like the boy's finger, be chopped off by a clean cut, and the cut extremities immediately joined, the descending pulp will thicken like the watery part of the blood, and while it remains soft, the sap from the cut ends of the sap vessels will force its way through to their continuation above in the cut slip, which, if the process be successfully managed, will grow as well, or nearly, as if it had never been cut.

If, again, instead of applying the same cut slip to the part it was cut from, a slip from another tree be applied, as if I had applied to the boy's finger the tip of another boy's, chopped off by the same accident, there seems no good reason to doubt that a similar healthy joining might by care be effected. In the case of animals, indeed, such joinings are rare, because rarely tried; but in garden plants they are exceedingly common, for the purpose of continuing esteemed varieties of fruits and flowers, accidentally produced by cultivation, as well as for forwarding the fruiting of young trees—since seedlings require years to arrive at a bearing state.

On examining the joining of a graft about a fortnight after it has been made, I have found, as in a healing finger-cut, a number of small roundish grains, in form of a thin layer, produced from the thickening of the pulp, and destined to form the hard substance, which in general projects a little externally, and the scar differs in appearance from the other parts of the bark. It is, however, only in the space between the pulp-wood and the bark that the uniting substance is formed, and therefore it is evident the slip, to be grafted, must have this part applied to the same part of the stock, and, if these differ in thickness, at least on one side. Nothing can be more erroneous than the doctrine that the buds of the graft "send woody matter downwards, which passes through the cellular substance into the stock, and covers the wood of the stock with new wood;" for every gardener knows that the graft never changes the wood of the stock.

One of the most obvious principles of this process is, that the sorts to be grafted should be alike, or nearly alike, because, in that case, the arrangement of the sap and pulp vessels being similar, their cut ends will more readily apply mouth to mouth, and less obstruction or interruption of the circulating juices will take place. The ash may, however, be grafted on the olive.

To this principle there is an exception, arising from the peculiar design which the graft is intended to fulfil. When the design is to increase fruit-bearing, the stock may be of firmer texture than the cutting, as for instance, by grafting the black heart and bird-cherry, or when a peach cutting is grafted on a plum stock, which having narrow vessels, a part of the descending pulp is stopped short and serves to strengthen the branch. If it be intended to increase the branches and leaves on the other hand, a plum cutting grafted on a peach stock might probably do so, by allowing the ascent of more sap.

Binding of the Graft.—When the joining has been made by cutting and properly fitting

the bark of the slip to the bark of the stock, at least on one side thereof, it must be bound so as to prevent this junction from being deranged. This is usually done with a ball of three parts of clay, free from stones, well worked with one part of fresh horse-droppings and a little finely-chopped straw, the whole about an inch thick, and two inches or more in length, being tied with a riband of bass.

The principle upon which this is done, is to prevent the oxygen of the atmosphere from getting to the fluid pulp at the joining, where it would unite with the carbon and form carbonic acid gas, and thereby rob the pulp of its solidity. The exclusion of light is necessary on the same account, for a similar reason as in the case of a finger-cut, the oxygen would unite with the carbon and prevent the thickening of the matter from the blood. On the same account, moisture, by supplying oxygen, would be injurious; and dryness might act both by exhausting the pulp and by causing the edges of the bark to shrivel and gape, which would facilitate the entrance of the air with its oxygen.

It must be obvious from this simple principle, (never, that I am aware of, before stated with reference to grafting,) that no composition, whatever may be said of its peculiar power of healing, can act in any other way than this; no more than the farrago of plasters and salves for healing flesh-wounds and cuts, which are only good in so far as they keep the lips of the wound together, and exclude oxygen and light.

Report of the Exhibition of Agricultural Productions, &c. at Stirling, at the premises of W. DRUMMOND & SONS, Nursery and Seedsmen, from November 16, 1832, till March 16, 1833; with communications on the following important subjects, viz.: Wedge and Tile Draining; Thorough Drainage and Deep Ploughing; Bones as a Manure; the Improvement of Agricultural Plants. Stirling: Published by W. Drummond & Sons. 1833.

[Continued from page 266.]

MISCELLANEOUS.

Model of a Drain.—By Mr. Smith, of Deanston. Section at full size, showing the form and filling of the furrow or frequent drains used on Deanston farm. Width of the model at top 13 inches, sloping to 4 inches at bottom; depth 30 inches, filled one foot in height with stones broken to the size of road metal, which are covered with turf, and soil filled in. The cost, &c., was also given.

Models of Wedge-Drains.—By William Murray, Esq. of Touchadam. Sections at full size, showing the construction of the wedge-drains as used on the carse portion of Polmaise estate. No. 1, with wedge bricks, used extensively. No. 2 with peat. Also specimens of the bricks made on the spot, with mould for forming the same.

Wooden Soles for Drain Tiles.—From the Saw Mill on the estate of Sauchie.

Straw Ropes—Garlands and Side Ropes.—By Miss Mary Henderson, Burnhead farm, Throsk. Made with facility and ease, about half an inch in diameter, and being smooth and compact, are as strong and much more durable than the thick ropes.

Do. do.—By Miss Agnes Mitchell, Auchenbowie.

Do. do.—By Alex. Dow, ploughman, Forthbank. The straw is all drawn, being regularly and compactly twisted; though not above half an inch in diameter, they are strong, are wrought easily without ruffling the thatch, and last double the time of the ordinary thick ropes, as the rain does not penetrate them.

It was pleasing to witness the emulation existing among this class of contributors, chiefly farm servants. The advantage of expertness, and of a well made article, must be obvious both in respect to facility and efficiency in harvesting work, and no master should undervalue this effort of their servants. True, harvest is not a season for mere niceties, but in the best regulated farms these ropes are made at a slacker season, and they will do their work much quicker by first learning to do it well.

Wheat Straw for Thatch.—By Mr. Robert Kay, Shiphaugh. Thrashed by the mill so as not to break the straw; the grain only is thrashed off, the straw not being allowed to pass through.

Sugar.—Made from the sugar maple in America. Mr. Robin Balquhidderock. Do. in lump.—By Mr. P. Gilchrist, Montreal.

Specimen of a Beech Hedge.—By Messrs. Drummond, from their nursery grounds. The mode of rearing is simply by annually cutting the sides close in, and nearly perpendicular; but never the tops, until they arrive at the desired height. Each plant has thus a fine stem (6 inches separate) well feathered, and the hedge presents a close surface of leaves, occupying no more space than a common garden wall. 900 yards of these hedges have been kept 7 to 8 feet in height more than 20 years, increasing in width only 2 or 3 inches. Height of the specimen 7 feet; width at bottom, 15 inches; width at 6 inches from the top, 12 inches.

Improved Horse Shoes and Horse Shoeing.—By Mr. Peter MacVean, Veterinary Surgeon, Stirling, viz.:

1. Professor Colman's Patent Frog-bar Shoe.
2. Do. do. do. Clip Shoe.
3. Saddle Fore Shoe.
4. Hunting Hind Shoe.

(Finished off on preserved and varnished hoofs.)

5. Hunting Fore Shoe.
6. Bar Shoe.
7. For contracted sinews.
8. Carriage Fore Shoe.
9. Carriage Hind Shoe.
10. Road Shoe.

Ass' Shoe.—Made by David Robertson, New Bridge Works, Stirling.

It is anticipated that much advantage would result from attention being more generally turned to the correct principles of horse shoeing.

Altringham Carrot, 3 lb. 2 oz., and Mangold Wurzel, 9 lb.; from light loam; cow dung.—By Mr. J. Rankine, gardener, Kilsyth.

Mr. R. presented last year to the Exhibition, an Altringham Carrot weighing 9 lbs.

Fortyfold potatoes.—From Carbrook Garden. Deep loam; stable dung. Produce from a ¼ lb. 34 lb. Mr. James Miller, Craigs of Stirling. Produce from 1 lb., 64 lb. Mr. Thomas Gourlay, Craigs of Stirling.

The following are from Messrs. Drummond's nursery grounds, viz.:

1. Altringham Carrot, No. 1—Raised with an application of moss or peat soil, well sized and very clean. No. 2—Raised on light loam; the common soil of same lot, small, and from the effects of the worm, much forked.

The moss mixed with the proportion of dung, was introduced into a rut, (made by a wedge-shaped dibble,) 6 inches wide at top, and at least a foot deep, the seed sown immediately above. This experiment, intended to show those who may not already be aware that carrot may be cultivated to great advantage on any mossy spot, also indicates that much may be done to ensure carrot for the table in old garden soil.

2. Mangold Wurzel, raised with an application of moss.—6 roots, 39 lb.; heaviest, 8¼ lb. If the soil be deepened and well pulverized, this plant will do in either heavy or mossy soils; in the former, however, blanks are often found, occasioned by the seed, with its thick husk, gaining credit for more than it is able to perform, being dibbled in too deep.; Paper, ale, and spirits, have been recently manufactured from this root.

3. Yellow Beet.—5 lb. 12 oz. Used in France and Germany for the sugar manufacture. 1 cwt. of sugar is obtained from 1 ton of the roots.

4. Kohl Rabi, or Turnip Cabbage.—6 roots, 18¼ lb.; heaviest 3¼ lb. Is much used at table in Germany; esteemed equal to cauliflower when cut small as dice, and well stewed or boiled.

Subsoil Plough.—Invented by Mr. Smith, of Deanston, and exhibited by him with the following label—"Used on Deanston farm; drawn by four horses, yoked two and two. A furrow of about 12 inches broad and 8 inches deep, is taken up by a common plough, when the subsoil plough follows, going from 16 to 18 inches deep from the surface; will plough a Scotch acre in nine hours, turning out all stones not exceeding 2 cwt., and completely opening up the subsoil. Cost of a plough, with soam chain and two socks, from £7 to £8. 30th November, 1832."

NEW-YORK FARMER.

OCTOBER 1, 1834.

NEW-YORK AGRICULTURAL FAIR.—On the fourth Thursday, the 23d, of October, there will be, under the direction of the New-York County Agricultural Society, a Fair for the Sale of Live Stock and Agricultural Products of all kinds. It will take place at the Red House, on Third Avenue, near Harlaem. From the arrangements that are now making, it is expected that the Stock of the most distinguished breeders in our State, and from the adjoining States, will be offered for sale. Blood Horses, full bred Durham and Devon Cattle, Saxony, Merino, and Cotswold Sheep, Berkshire Hogs, and various other Domestic Animals of less note. Also Working Oxen, Milch Cows, more common breeds of Horses, Sheep, and Swine. In addition to these, all kinds of Agricultural and Gardening Products, Implements, and Machinery, will be offered for sale, either at auction or by private contract.

Amateurs, breeders, and those who are desirous of making a commencement in improving their stock, are invited to attend; and all who have for sale stock or other articles used on the Farm or in the Garden are requested to avail themselves of this unusual opportunity to dispose of them.

Circulars containing further particulars will be immediately issued.

THE WEATHER AND CROPS OF SEPTEMBER.—In the early part of this month a very fine rain occurred in this section of country, and several showers have fallen since. Pasture grounds generally now look well, but it is supposed that the rain was not in time to benefit the potatoe crop except in moist situations. Early sown turnips must have suffered considerably from the drought; the weather, however, for this month, with the exception of a few cold nights, in which there was in very low situations some frost, has been very favorable for advancing this crop. The corn crop will not be a full one, although much will depend on the mildness of October and the lateness of frost.

We are inclined to think that the abundant produce of the early crops, and the fair prices which all sustain, will cause this season to be numbered among those of much encouragement and reward to the industrious farmer.

Carolina.—The Milledgeville Journal, of 3d inst., has the following notice:

"The cotton crops are at last, we fear, to be cut short. Information has been had, as we understand, from various quarters of the State, that the worm is making fearful ravages."

Genesee.—An unprecedented drought has been experienced in this section during the whole of the past summer. Though we have recently been favored with showers, there is still great want of rain. The fall crops are much injured in consequence of the dry weather. Corn is coming short—potatoes are nearly cut off,—there is but little pasturage

left, and the streams are low. A correspondent has sent us the following:

"We have finally been favored with showers and rain. For these we have long panted as the hart for the cooling brook. Till well nigh suffocated with dust, we have been doomed to witness the failure of all signs, from sundogs to inverted moon's horns and sportive night hawks, down to chirping crickets: all *never-failing* signs, except when the times are so dry that nothing but rain itself is a sign. The withering drought is therefore for a time suspended, and the approach of the equinox argues better things for the time to come.

"The amount of water which has fallen through the summer months for the last four years, is as follows:

Years.	June.	July.	Aug.	Amt.
1831	3.4	5.4	1.2	10 in.
1832	1.2	4	7	5.9
1833	2.6	3.8	2	8.4
1834	1.9	1.8	1.8	5.5

"As facts are stubborn things, here is the evidence of an unusually dry summer. If, as is the common observation, nearly the same amount of water falls every year, this deficiency will be supplied before the close of autumn. The spring months, it is well recollected, were generally dry, and we believe that since the snow storm of May the ground has not been saturated with moisture."—[Gen. Farmer.]

Quebec Agricultural Report for August.—The usual reports for June and July have been omitted. The season continued cold and wet till the last week in June, and although the seed time had been early, all crops were then more backward than usual. In the first week in July the warm weather set in, and continued hot and dry, with very little intermission, till the middle of August. The thermometer rose, on two different days, to between 90 and 100 in the shade; and the drought nearly dried up the streams, wells and springs.

The heat, with the great moisture which was in the ground when it first set in, brought forward all sorts of crops with extraordinary rapidity; and after they covered the ground, a few slight rains and thunder-showers, and heavy dews, kept them in vigor.

There never was a better haying season than the last; the quantity is a full average, and of good quality.

Potatoes and turnips have suffered most by the drought, and will be but a short crop, excepting on new lands. Peas have also suffered on the dry lands, where they are usually sown. Oats are generally good.

The wheat harvest began early in August, and the weather has been favorable for getting it housed in good order. The crop, most of which is now cut, is a fair average, although it has suffered on light lands, and in some places severely, by the small brick-colored worms in the grain, the ravages of which were first extensively noticed in 1832. The germ of these worms seems to be deposited in the ear about the time the wheat is to blossom, or soon after. Wheat on high lands has suffered the least; but the injury to several grains in many ears is very general, and in some nothing remains but the chaff.

The pastures, and consequently the produce of the dairy, were unfavorably affected by the droughts, but the live stock remains in good condition.

The gardens have suffered from the same cause. The orchards were well stocked with fruit; but a great part of the apples have fallen off, probably for want of moisture, and are much injured by worms.

The return of the cholera to Quebec, with the setting in of the warm weather in July, and its spread throughout the country, have diminished trade and intercourse, and every sort of enterprise and industry, and consequently unfavorably affected the markets. Although much less was brought for sale than usual, the scarcity of money has kept the prices lower than common, and leaves but unpromising prospects. It behoves us to humble ourselves upon the severe visitation which has now fallen on almost every country in the world; to comfort and aid each other in our afflictions and necessities; and, leading quiet and orderly lives, carefully to search out and adopt means of diminishing the evil in future.

Quebec, 30th August, 1834.

Monthly Agricultural Report for August.—For the last month there has been scarcely any rain; and a large proportion of the wheat and other grain has been housed in good condition. About the middle of the month there were some light showers; and wheat cut, and remaining on the swarth at that particular time, had actually commenced sprouting in a few hours, from the heat and moisture of the ground and atmosphere. I would, therefore, again urge the necessity that wheat should be tied up in sheaves, and set up in stocks, immediately after it is cut, as the safest and best mode always. Though I would consider this year as most favorable for the production of good wheat, yet much of the crop has suffered considerably by the maggot that damaged the grain in the ear, and which, I believe, could not be prevented by any human precaution yet known. It is also diseased by smut, which, I suppose, might be prevented, in a great degree, by proper washing and preparation of the seed; indeed, unless an efficient remedy is discovered and adopted to check this most destructive disease, I am convinced it will be found to increase every year. Farmers should, therefore, make trial of every remedy that appears reasonable and easy. It is the opinion of some, that even the soil becomes infected by the seed of the fungi, which may exist in the field where diseased wheat has been growing before. Steeping the seed wheat in properly prepared lime-water for twelve hours, and then drying it in the air, before sowing it, is said to be a most effectual remedy, even against infection in the soil.

In a former report I alluded to the practice in Flanders, of steeping the seed in salt water, in which copperas or verdigris has been dissolved, in the proportion of half a pound of verdigris to every six bushels of seed—allowing the seed to remain in the mixture three hours. The object of this preparation is to destroy the seed of the fungi, which are said to insinuate themselves into the grooves at the backs, and the beards at the tops of the wheat grains; and to deprive these fungi of their vitality, I would strongly recommend either of these remedies.

Barley, oats, and peas have generally proved to be good, with the exception of late sowed oats, which are short in the straw, and deficient every way.

Potatoes will be far short of the produce that might be expected from the great quantity planted. The last two months were unfavorable for the production of this root in perfection: they require a season moderately moist. I have not recommended the extended cultivation of potatoes in order to their being more extensively made use of as human food. It is by no means desirable or necessary that, in such a country as this, potatoes should ever be introduced as human food, except as a necessary vegetable with flesh meat and other good things. Let us grow abundance of potatoes, but not for the principal food of any part of our population, until transformed into butcher-meat. Even the poorest of our emigrant population, if they are industrious, sober, and make a proper use of the opportunities they are favored with here, never need be reduced to the condition of a large portion of the working class of other countries, who have little else than potatoes, poverty, and wretchedness, for their portion in this life.

Pastures have suffered very much, and there is very little tattermath, in consequence of the continued drought.

Butter has improved in price.

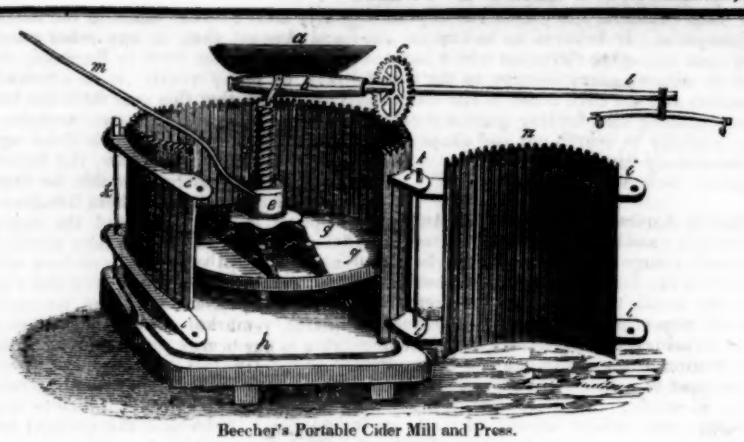
From the year 1826 to the present, considerably more rain has fallen in the month of July and August than in any other months of the year. So it has been in England, on an average of many years. It is a remarkable circumstance, that this year there has been scarcely any rain the last two months, and the ground is now very much dried up, and the grass withered; however, the harvest season has been extremely favorable for farmers getting in their crops. There has been no interruption to the work, and the expense must, therefore, be much less than usual. Though all our crops may not have been so abundant as to satisfy fully the desires and expectations of farmers, and leave them no cause of complaint, yet I am convinced such a season as this is every way preferable to those we have had for the last seven years, particularly for the production of good wheat, whatever may have been the cause of injury to some part of the crop. In Ireland, the summer of 1826 was the driest within the memory of man; and the wheat crop proved to be better, and a finer sample of grain, than was before ever recollected by the oldest farmers. In the Island of Sicily the most valuable wheat in Europe is produced, containing more gluten than the best wheat of Britain; there the climate is hot and dry.

In conclusion. The crops are now partly harvested; the next question that is interesting to the farmer is, how the produce can be disposed of to the best advantage, and on the best subject. I shall submit my ideas, with all due deference, at a future time, not very distant.

Wm. Evans.

Cote St. Paul, August 30, 1834.

Massachusetts Horticultural Exhibition.—The Massachusetts Horticultural Society have made extensive arrangements for the celebration of their anniversary. On this occasion a magnificent profusion of fruits and flowers have been deposited in Faneuil Hall, the voluntary offerings of the liberal and enlightened horticulturists of this vicinity. Such a beautiful display has never been seen in this city, if in this country or any other. Pomona seems to have emptied her basket, and Flora the horn of plenty; in plain English, the goddess of fruits appears to have "upset her apple cart," and she of flowers to have scattered her gifts with countless variety and the utmost prodigality. They were arranged on tables with great taste, and presented at a glance rich specimens of the fruits of every soil, clime and season, all the production of our own immediate vicinity. The names of the contributors were attached to the different parcels, and these were so numerous, choice, and so transcendently beautiful to the eye, and tempting to the taste, that it would be an endless task to enter into details. Indeed, such fruits and flowers would baffle description. We, therefore, invite all who are fond of the beauties of nature, to go and look for themselves. The exhibition was opened yesterday, and will continue open this day and to-morrow. Yesterday, the hall was thronged with ladies and gentlemen, who paid their 25 cents and were delighted with the display. At 12 o'clock, an address was delivered by John C. Gray, Esq., and it is spoken of in high terms of commendation by the discriminating audience present. This is one of the most useful of our societies. Fruit and flowers, like every thing else, are found to be susceptible of extensive improvement by cultivation. Soil and climate do much, but cultivation more. Every one, therefore, who is fond of good fruit, should be ready to bring an offering for the encouragement of a society whose only object is to improve them in all their varieties.—[Boston paper, of Sept. 18.]



Beecher's Portable Cider Mill and Press.

MONTHLY REPORT OF EXHIBITED ARTICLES.—Not as many articles were sent in for exhibition, at 81 Barclay street, as we had hoped. Farmers and Mechanics will study their interests by attending to our remarks under this head in our August number.

Beecher's Cider Mill and Press.—This is a portable machine combining in one the grinding part and the press. It occupies a space of five or six feet square. It is a very economical cider mill. Mr. B. has not yet fully established its merits from practical experiments.

References—*a*, hopper; *b*, grinding apparatus; *c*, cog wheel; *d*, screw of the press; *e*, entrance of the lever; *f*, blocks; *g*, planks for pressing; *h*, bottom of the press; *i*, holes to secure the braces or arms; *k*, rods or pins; *l*, beam to attach the horse; *n*, door to take out the pomace.

Drill Sowing Machine.—Dr. Beach exhibited a simple Machine for sowing seeds in drills. It consists of two circular plates of tin or sheet iron, fastened together by another piece of the same metal about one foot wide. In this last are holes for the seeds to come out. Through the centre is an axle, to which a handle is applied. The instrument is rolled along in the drill. Dr. B. has used it for several kinds of small garden seeds, and finds it to succeed well.

Broad-cast Sowing Machine.—This is an invention of Mr. Reuben Hill, of Hanover, N. H. It consists of a hopper and sieve of the proper size, attached to an axle connecting two wheels. To one of these wheels is attached a bevel and pinion, that move the sieve back and forth horizontally as the machine is drawn along. Mr. H. has not as yet put it in operation.

Corn and Cob Cracker.—Though not a new invention, this machine is much sought after by farmers.

Ornamental Trees.—Specimens of the seeds and leaves of the different kinds of oaks growing on the farm of Mr. Thomas Ash, of West-Chester.

Black Sea Winter Wheat.—A few bushels of this wheat raised in Massachusetts have been received. An account of this wheat may be found in the February number, page 53.

Gama Grass.—Very excellent specimens of the grass, roots and seeds. Some of the latter will be for sale at the Fair, in October.

GATHERING POTATOES.—Recollect that potatoes should not be exposed to the sun when digging them, any longer than can be possibly avoided.

BUCKWHEAT.—STEAMED CORN STALKS.—The Baltimore Farmer and Gardener, after speaking of the benefits of leaving the top stalks uncut until late, says,

"We know that buckwheat, when cut, has many grains which are but barely formed; yet the sap contained in the stalk proceeds on its course, and nourishes the grain; and we find that the young grains are brought to perfection, after being cut. The same thing would take place in corn if cut at the root, instead of being taken off above the ear.

"Any one may satisfy himself, merely by his own taste, that the portion of stalk below the ear contains much more saccharine matter than the upper part, which is saved by topping; and this fact is corroborated by the experience of the writer of this article. He kept three horses and twelve cows in this way. The 12 milch cows were kept in stalls—18 bushels of the stalks, cut in a horse power cutting-box, were every morning put into a trunk having a false bottom, 6 inches from the true bottom—half a bushel of indian meal was mixed as equally as possible through the stalks. The 6 inch space between the true bottom of the trunk, which was perforated with holes to admit the steam through, was divided into two apartments, by a transverse partition; and contained a small portion of water. Into the upper apartment, for one end was a little elevated, were put 4 qts. of flaxseed, every morning; and into this water was admitted steam from a steam engine. The stalks, meal and flaxseed, were all cooked in this way, in about one hour and a half after the steam had commenced passing over. The water in which the flaxseed was steeped was formed into a jelly, and drawn off and poured over the stalks before feeding away to the cattle. The second morning the portion of seed that had been steeped the day before was drawn down to the lower apartment, and replaced with 4 qts. more of seed, and the first portion of seed after the second steeping was taken with the jelly, and poured over the stalks to be given to the cows. We have before shown the tendency of steaming food, to convert the mucilage, starch, and gummy matter into sugar.

"Thus each cow had daily of meal 1 qt. 1½ gill; of flaxseed 1½ gill; of stalks one bushel and a half. With this feed the cows were kept in a full flow of milk; and when dry, they were in good condition for the butcher.

"The cream from their milk made as good and as yellow butter as was made in the summer from white clover and orchard grass pasture."

The following is from the same paper. The moisture spoken of by the writer, doubtless, came from the stalks. If heat will drive off a surprising quantity of liquid from an oak stick that has been seasoned and dried for years, it is not surprising that fermentation should cause moisture to exude from the stalks.

MR. EDITOR: The account yon have given in your paper, of the effects produced by the common practice of curing fodder, and especially the effects of steaming food for cattle, has been read by me with great attention; and it seems to come to the point which occurred to me some years ago; which I will mention, after relating my manner of saving corn fodder.

I have for years been in the habit of saving my stalks by cutting them close to the ground which may be done without injury to the grain, as soon as the husk on the corn has become dry; or on the approach of a frost that will destroy the blades. At such time I have the stalks cut, and with the ears on, they are carried and set up in small shocks, which are tied near the tops with one or two stalks twisted together, to keep them from falling. These shocks being placed in straight rows through the field, the rest of the land may be ploughed and sowed—for I never sow among corn. The shocks may stand in this position, if desired, until after sowing is ended, when they are carried in, and the corn gathered into the crib. The whole of the stalk and husk, I then have cut in a common cutting box, adapted to horse power, and fed to the cattle as wanted, which I find cattle will winter on as well as on the best of hay.

I will now relate the circumstance which this letter is intended to communicate. Some stalks which had been shocked in the manner mentioned, and had stood until they were pretty well dried, were taken in and cut in the box as usual.

In consequence of several days' rain, they were suffered to lie in a bin which was about six feet square, and eight or ten feet high, and was full of the cut stalks. When going to use some of them four days after they were cut, a board left to slide for the purpose, near the bottom of the bin, was drawn out, on which the smoke poured out of the space to such a degree as to induce the belief that the barn was on fire. The stalks which came out were quite black—some of them had undergone the putrefactive fermentation. All the mass was wet to dripping, and emitted a smell similar to that observed in a sugar-house. The appearance of the stalks was such, that all thoughts of their being eaten was given over, and some of them were thrown out at the door. However, this opinion was soon found to be a mistake, for the cattle, directed by the sense of smell, were soon invited to the spot, where they were observed to be hooking and driving each other from the stalks, and catching a mouthful as they could, with an eagerness never shown for the best hay: their eagerness would not have been surpassed, if a cart-load of corn in the ear had been thrown to them. The rest of the cut stalks were spread, and when dried, were all eaten heartily by the cattle. Now, sir, I should be glad to know if your science can account for the water which was found among the stalks: it could not have been imbibed from the air, for the box was air tight, with the exception of a small opening in the top. The stalks were so dry, that had they been subjected to the pressure of Bramah's press, I am sure there would not have been three gallons of water obtained from them; and they had the appearance of being soaked through and dripping with water. If steaming will have the same effect as this fermentation had, it will very much increase the value of food. Yours, A FARMER.

DAIRY SECRET.—Have ready two pans in boiling water, and on the milk's coming to the dairy, take the hot pans out of the water, put the milk into one of them, and cover it with the other. This will occasion great augmentation in the thickness and quality of the cream.

Wool Growers.—We doubt the practicability of obtaining the objects of the association noticed in the subjoined extract. Increased intelligence derived from individual effort seems to us the surest means of getting good prices.

A meeting of wool-growers is to be held at Bradford, (N. H.) on the 23d inst. for the purpose of forming an association to protect the interests of that class of producers, to establish uniformity of prices, and to enable every one to obtain the market price for his wool.

Extensive Green-House.—A wealthy merchant of Boston is erecting a green-house 400 feet in length, and will, with the apparatus, cost about 20,000 dollars.

Peaches.—There is probably no part of the country where peaches are cultivated to the same extent as at Shrewsbury, in New-Jersey, near Sandy Hook and Long Branch. Shrewsbury has got to be as famous for good peaches as Newark formerly was for cider. The farmers have orchards of from 2,000 to 10,000 peach trees. Mr. Jones, of Shrewsbury, carries this business to the greatest extent. He has now upwards of 30,000 peach trees, on three farms. Last spring, when his trees were in full blossom, he expected to bring to market 20,000 baskets of peaches, but the frost of the 14th of May destroyed nearly all the fruit, and he now does not expect to get over 4,000 baskets from the same trees. The soil round Rockaway is said to be equally favorable for peaches with that of Shrewsbury, and if some enterprising man would cultivate them to some extent, he might find a good market for them at the Marine Pavilion.--[Post.]

Figs.—It cannot be doubted that this delicate and delicious fruit may be raised in plenty for the market by proper attention. We have now before us a twig raised in the garden of Mr. Samuel Hart, of the United States Navy Yard. The twig contains five ripe, and very numerous unripe figs; it was the second crop on the tree, as the first had been destroyed by the extraordinary frosts of the season. The tree contained about 50 ripe and 200 unripe figs. We hope some of our ambitious gardeners will take a hint from these facts, and give us plenty of figs. A very little care and labor would no doubt produce much profit.

The above is from the Long Island Star. The red fig ripens in this latitude far better than the white.

Soil for Grapes.—We cannot conceive why the foreign vine should so generally fail in this country. May it not, like the potato, require a different soil in this country from that in Europe? The following is from a communication in the Southern Agriculturist:

It has been said that sandy and rather poor land produces more perfect and richer berries than soil of greater fertility, and more largely mixed with clay. This, too, is contradicted by my observation. By far the most thrifty and valuable vineyard I ever saw, comprising six or eight varieties of the grape, on about seven acres, is now cultivated in the county of Jasper, (Georgia,) on a high hill of pretty rich red clay and very stony. I saw it last July in full bearing, the fruit just beginning to ripen, and not a berry diseased, except a few Isabellas, and, perhaps, one other variety, the name not now remembered. The excessive wet weather of last spring was fatal to grapes growing on sandy soils; yet the vineyard in Jasper, on red clay, was never more prolific, yielding, as I understand, between one and two thousand gallons of wine, which the skilful and fortunate cultivator, Col. Alexander, sells readily at from one and a half to two and a half dollars a gallon, when above one year old. But this was not the only instance of pretty uniformly good crops being produced on rich red clay lands.

Planting Fruit Trees.—Early as possible in October, commence planting fruit trees.

Salting Corn Stalks.—It is recommended to sprinkle moderately your corn stalks, when you are mowing them away, with a solution of salt and water. If they are cut up when fed out, the salt is said to add very greatly to their palateableness.

Green Corn in Winter.—We do not know why the soft ears of corn may not be gathered this month, and prepared as directed in the following article from the New-York Commercial Advertiser:

Of all the productions of summer, there is hardly one more nutritious and palateable than green corn; yet it is proscribed as contributing to some of the complaints of the season. In this, however, as in many other cases, the ingenuity of man has found means to turn this inconvenience into good account, by preparing and keeping this article for winter use. But the method for doing this seems not to be universally known. It is common in many parts of New-England, but the writer does not recollect to have seen the prepared article in our market. It may be so prepared as to be as good and as palateable in the winter as in the appropriate season, and may be eaten with perfect safety, if not as the promoter of health.

The simple process of preparing it is this: The corn must be taken from the stalk when it is full in the milk, or in that state in which we generally use it—the husks stripped off, and the ears thrown into a kettle of boiling water, where it may remain half as long as you would boil it for present use. This will harden it so that it may be easily taken from the cob. It may then be spread in the sun till it is thoroughly dry. In preparing it for the table it may be soaked from twelve to fifteen hours and boiled in the same water. But care must be taken not to boil it too much, as that will make it hard, and diminish its sweetness.

N. B.—To get the corn from the cob, every alternate row may be punched off with a sharp stick, and the remainder wrung off with the hands.

[The above statement is literally true. We have often ate of corn thus prepared, and can bear testimony of its excellence. Our "*better half*" has prepared a quantity the present season for winter use, and it almost makes our teeth water to think of what good eating it will be in January. Green corn in January, only think of that!—Editor of the Warren, Ohio, News Letter.]

Self-sharpening Wedge Plough.—The point of this plough is a bar of iron 12 to 18 inches in length, with steel at each end. This bar, when worn on one side, can be turned over, and then it presents a sharpened edge. When one end is worn short, the bar is reversed, and thus one bar is made to last a long while. The share is simply a small piece of either cast or wrought iron, nearly in the shape of a parallelogram. The advantages of this plough are that the point is always sharp, that any common blacksmith can supply the worn-out casting, and that the expense of keeping it in repair is less than the common cast iron plough. We are inclined to think it will do the best work. In a future number we will give a drawing and a further description. It is manufactured by Mr. Mayher of this city, and sold at the Agricultural Warehouse, 81 Barclay street.

Draining.—*Mr. Fleet:* On reading an article in your August number, entitled Uncultivated and consequently Unhealthy Condition of New-York or Manhattan Island, in which you very justly attribute much of the sickness and forbidding appearance of our otherwise healthy and beautiful Island to a want of draining the ground, my attention was drawn to the condition of my own little domain. After a rain nearly one half of it was overflown, and a great part of the remainder, in the spring and fall, was so wet as to render it very unpleasant if not unhealthy to perform the requisite business about my barn and yards. I had a drain dug through it about a foot and a half deep. Now, after one of those long and heavy rains which, even at this season, did flood my grounds, I had the pleasure of seeing the whole current of water confined to the drain and hurrying along to overspread my neighbor's field, which is not drained, although it is, the greater part of the season, so very wet that it is next to impossible for a person to walk[though it, and could be, by the most trifling expense, rendered perfectly dry. The cost of my draining was 12½ cents per rod. In quality and quantity my pasture will doubtless be improved fifty per cent. enabling me to get rid of my boggy grass, which my cattle would not eat. I now clearly see the difference in a field that is and one that is not drained, and would, therefore, advise every one who has a piece of ground on the Island to drain it well.

Yours with much respect,

S. S. C.

Locust Trees.—*Mr. Fleet:* These trees are raised with less difficulty than is generally imagined. A year ago last May I sowed some seed, the trees from which have grown so luxuriantly that a number of them now measure seven inches in circumference and fourteen feet in height. At this rate of growth timber will be obtained in a very few years. The soil is sandy, and was rendered rich with cow manure. In the same inclosure and on the same kind of soil, some seed were sown, but without manure. These trees have not attained half the height nor more than one-third of the diameter. Why should any one, who has ground, be without a locust grove, which for beauty and value is not surpassed by any tree that decorates the field or the garden? Yours, J. A. C.

September, 1834.

Patagonian Gourd.—On a visit to an agricultural friend in New-Jersey last week, we were shown a plant of the above name growing in his garden, which surpasses all the vegetables we ever saw for productiveness. Our friend informed us that he obtained and planted last spring *three seeds*. The quantity of vine and foliage is already prodigious, though apparently not yet near to its extent or maturity. The number of fruit was already very great, but the blossoms indicated that its bearing was only begun—certainly none of the gourds seemed near to their growth, though one of them hung from the vine which had run over a fence, *full four feet long*, in the shape of a club. Our friend promised to send us one of the gourds when ripe. He understands that it is eatable, being sliced and cooked like the egg plant. When we receive the one promised us we will speak further on the subject. This account is long enough, and it is not our fault if it is not large enough.—[Farmer and Gardener.]

The Cleveland (Ohio) Advertiser of August 22d says, that a small quantity of molasses was brought to that village last week from Medina county, manufactured from potatoes. The flavor is pleasant, and the article equal in every respect to West India molasses. The process of manufacturing is said to be simple, and not expensive.

[From the London Christian Observer.]

THE MORAL OF FLOWERS.

THE WILD WALL-FLOWER.

What various turns of chance and fate
This mouldering pile has known!
What wide magnificence and state
Within its halls were shown,
When crowds of knights and ladies gay
In weeds of peace kept holiday!

These walls, where now with softening grace
The ivy-wreath is flung,
With trophies once of war and chace
Were thick and proudly hung;
But helmet, spear, and horn, are gone
To augment the dust we tread upon.

Full oft this cell in weary thrall
Hath lonely captive held;
And these proud towers the whizzing ball
Like granite rock repelled;
But, ah! they fall and crumble now,
Beneath a stronger, mightier foe.

Time, Time, his withering hand hath laid
On battlement, and tower,
And where rich banners were displayed
Now only waves a flower.
List, and 'twill fitting comment read
On revel gay and martial deed.

Mute is the warden's challenge, mute
The warrior's hasty tread;
And tuneless is the lady's lute,
For she is with the dead;
And but a flower now mourns the doom
Of prostrate strength and faded bloom.

Read, stranger, in this ruin's fate,
An emblem true of life;
Conflicting passions—love and hate,
Joy, sorrow, fear, and strife—
Combine, alas! in one dark plan
To storm the citadel of man.

And should they fail, a foe is near
Who ne'er defeat hath known,—
Time ever follows in the rear:
He wills—the work is done;
For where's the beauty, strength, or pride,
Hath o'er his withering touch defied?

Wear'st thou to-day the wreath of fame?
Oh heed it, heed it not;
A few brief years, thy place and name
May be alike forgot,
And but a lowly floweret wave
Upon thy unremembered grave.

Here ends the semblance. Never more
This ruined pile shall rise,
But man a seraph blest shall soar,
When what is mortal dies,
If while earth's changing path he trod,
His heart and hopes were fixed on God.

THE PRIMROSE.

Fairest of all that's fair
In nature's works, are ye, ye wilding flowers,
When thus at Spring's first beck ye blithely rear
Your shining heads to herald her bright hours.

But that your bloom is brief,
And here and there, on some slight stem a thorn,
Half hid perchance, beneath a shrivelled leaf,
Tells unto what sad destiny ye are born.

I could have thought the doom
Which gave to ruin earth, to storms the sky,
And man, God's last best work, unto the tomb,
Your primal beauty had unharmed passed by.

But are ye loved the less,
Than for our sakes these earth-born traits ye wear?
Oh, no! the very blight that mars your grace,
And speaks your frailty, makes ye but more dear.

Nor this your only claim
On man's regard; meekly from glade and bower
Ye warn and counsel him, as 'twere your aim
To win him back to Paradise once more.

Yes, each of ye in turn
Paints some pure moral to the human heart:
One bending 'neath the storm, to those who mourn
Lessons of meek endurance may impart.

Others that breathe at eve
Sweet incense, urge to watchfulness and prayer.
And with united voice *all* bid us leave
The morrow to our common Father's care.

And thou, so fair and pale,
That lovest midst grass and shadowing leaves to hide
Thy modest charms, sweet Primrose,—thee I hail,
Reprover meek of vanity and pride.

Alas that pride, which wrought
Man's woe in Paradise, should haunt him still;
No hated inmate, but with every thought
Twined, closely twined, and prompting aye to ill.

Oh, when within my breast
Such thoughts are stirring, do thou gently chide,
And timely whisper from thy leafy nest—
"Shall man be proud, to sin and death allied?"

THE PASSION FLOWER.

Oh, ne'er with cold and careless glance gaze I on thee, sweet flower;
Nor careless pluck thee, as I'm wont thy sisters of the bower;
No; fancy gifts thee with a spell unknown to all beside,
Which checks the hand thy beauty woos, and quells the glance of pride.

Each flower some fairy legend owns, to joy or sorrow dear,
Or simply beautiful, just such as wins gay childhood's ear;
But both to aged and to young, from cot to lordly hall,
Thou, thou hast that to tell shouldst hold each human heart in thrall.

Each flower some chosen emblem is: one is for beauty's bloom;
Another friendship claims; a third sheds fragrance o'er the tomb;
But linked with holy memories, to penitence how dear!
Thy shrine is aye the broken heart—thy dew, contrition's tear.

Would I such shrine could offer thee, and on thy pale leaves shed
Those sadly sorrowing tears which fall but when the heart has bled!
But ah! like sealed font, that heart withholds the tribute due,
Though lesser sorrows find it still to gentle pity true.

Yet dear I hold thy sacred lore, and oft with curious eye
Do trace the mystic characters which in thy bosom lie;
Types of those fearful instruments of agony and scorn,—
The cross which bore the Lord of life—the nail, the twisted thorn.

And now of many a cultured flower, and many a wilding spray,
I've sung, but thou the fittest seem'st to grace my closing lay;
Then come, and round my simple harp thy wreaths symbolic fling,
Lest meaner theme again should wake its consecrated string.

Management of Ornamental Plants for the Month of October.—The following article is from the American Flower Garden Directory:

GREEN-HOUSE.

Of Taking in and Arranging the Plants.—As observed in the previous month, let the housing of Green-house plants now be attended to. Have all in before the eighth of the month, except a few of the half hardy sorts, which may stand until convenient. Begin by taking in all the tallest first, such as Oranges, Lemons, Myrtles, Oleanders, &c. Limes ought to be kept in the warmest part of the house, otherwise they will throw their foliage. In arrangement, order is necessary to have a good effect; and in small houses it ought to be neat and regular, placing the tallest behind, and according to their size graduating the others down to the lowest in front. Dispose the different sorts in varied order over the house, making the contrast as striking as possible; having the surface of the whole as even as practicable, with a few of the most conspicuous for shape and beauty protruding above the mass, which will much improve the general appearance, and greatly add to the effect. All succulents should be put together. They will do in a dark part of the house, where other plants would not grow, studying to have the most tender kinds in the warmest part, and giving gentle waterings every three or four weeks. When all are arranged, give them a proper syringing, after which wipe clean all the stages, benches, &c. sweeping out all litter, and wash clean the pavement, which will give to all a neat and becoming appearance.

Let the waterings now be done in the mornings, as often and in such quantities as will supply their respective wants, examining the plants every day.

During the continuance of mild weather, the circulation of air must be as free as possible, opening the doors and front and top sashes regularly over the house. But observe in frosty nights, and wet, cloudy weather, to keep all close shut. Be attentive in clearing off decayed leaves and insects.

Any plants of Lagerstræmia, Sterculia, Hydrangea, Pomegranate, and others equally hardy, that are deciduous, may be kept perfectly in a dry, light, airy cellar, giving frequent admissions of air.

Of Repotting. — Anemones. Where A. nemorosa flore pleno and A. thalictroides flore pleno are kept in pots in the Green-house, they should be turned out of the old earth, and planted in fresh soil. They are both pretty, low growing, double white flowering plants, and require a shaded situation. The latter is now called Thalictrum anemonoides.

Daphne is a genus of diminutive shrubs, mostly evergreens, of great beauty and fragrance. Very few species of them are in our collections. D. odora, frequently called D. indica, is an esteemed plant for the delightful odor of its flowers, and valuable for the period of its flowering, being from December to March, according to the situation; leaves scattered, oblong, lanceolate, smooth; flowers small, white, in many-flowered terminale heads. D. hybrida is a species in high estimation at present in Europe, but little known here, being only in a few collections; flowers rose-colored, in terminale heads, and lateral bunches in great profusion, and very similar to the former in habit and shape of flower; blooms from January to May, and is of a peculiar fragrance. D. oleoides is what may be termed "ever-blooming;" flowers of a lilac color; leaves elliptic, lanceolate, smooth. D. laureola, Spurge laurel; D. pontica, D. alpina, and D. Cneorum, are all fine species, and in Europe are esteemed ornaments in the shrubbery, but we are not certain if they will prove hardy in our vicinity.

Primula. There are a few fine species and varieties in this genus, adapted either for the Green-house or Rooms. All the species and varieties will keep perfectly well in a frame, except the China sorts. Having previously observed a few of the other species and varieties, we will observe the treatment of these. P. sinensis, now prænitens, known commonly as China Primrose; flowers pink, and in large proliferous umbels, flowering almost through the whole year, but most profusely from January to May. Keep them in the shade, and be careful that they are not over-watered during summer. As the stems of the plant become naked, at this repotting a few inches should be taken off the bottom of the ball, and placing them in a larger pot will allow the stems to be covered up to the leaves. P. p. albiflora, color pure white and beautiful. P. p. dentiflora. There is also a white variety of this, both similar to the two former, only the flower indented. All these require the same treatment. As they only live a few years, many individuals, to propagate them, divide the stems, which in most cases will utterly destroy them. The best, and we may say the only method to increase them, is from seed, which they produce in abundance every year.

Pæonia is a magnificent genus. There are four varieties of them, half hardy and half shrubby. They will bear the winter if well protected, but are better in the Green-house. These are P. moutan, Tree Pæony; the flower is about four inches in diameter, of a blush color, and semi-double. P. M. Banksii is the common Tree Pæony, and called in our collection P. Moutan? It has a very large double blush flower, and is much admired. P. M. papaveracea is a most magnificent variety; has large double white flowers, with pink centres. P. M. rosea is a splendid rose-colored double variety, and is scarce. These plants ought not to be exposed to the sun while in flower, as the colors become degenerated, and premature decay follows.

If the Dutch bulbs intended for flowering during winter are not potted, have them all done as soon as possible, according to directions given last month.

Camellias.—These plants ought to have a thorough examination, and those that were omitted in repotting before they commenced growing, may be done in the early part of this month; but it is not advisable, except the roots are matted round the ball of earth, which should be turned out entire. Examine all the pots, stir up the surface of the earth, and take it out to the roots, supplying its place with fresh soil. Destroy any worms that may be in the pots, as they are very destructive to the fibres. Look over the foliage, and with a sponge and water clear it of all dust, &c. Frequently the buds are too crowded on these plants, especially the Double white and Variegated. In such cases pick off the weakest, and, where there are two together, be careful in cutting, so that the remaining bud may not be injured.

This is the best period of the year to make selections of these, as they now can be transported hundreds of miles without any material injury, if they are judiciously packed in close boxes. In making a choice of these, keep in view to have distinctly marked varieties, including a few of those that are esteemed as stocks for producing new kinds, which are undoubtedly indispensable; and will reward the cultivator in a few years with new sorts. Besides, it will afford unbounded gratification to behold any of these universally admired ornaments of the Green-house improving by our assistance and under our immediate observation. There is nothing to prevent any individual from producing splendid varieties in a few years. Mr. Hogg correctly observes, "It is very probable in a few years we shall have as great a variety of Camellias as there are of Tulips, Hyacinths, Carnations, Auriculas, &c."

It has been often said that these plants are difficult of cultivation. This is unfounded, indeed they are the reverse if put in a soil congenial to their nature. When highly manured soils are given, which are poisonous to the plants, sickness or death will inevitably ensue; but this cannot be attributed to the delicacy of their nature. We can unhesitatingly say there is no Green-house plant more hardy or easier of cultivation, and they are equally so in the parlor, if not kept confined in a room where there is a continuance of drying fire heat, their constitution not agreeing with an arid atmosphere.

FLOWER-GARDEN.

Of Planting Various Bulbous Flower Roots.—From the middle of October to the beginning of November is the best period for a general planting of Dutch bulbs.

Crocuses are the earliest in flower, and may be planted about six inches off the edgings, about four inches apart and two deep, or in beds four feet wide; the varieties selected and planted across the bed in rows of distinct colors, they flowering so early, and in that manner have a grand effect. There are above sixty varieties to be had.

Hyacinths. The ground that was prepared for these last month should be all divided into beds four feet wide, leaving between each alleys of twenty inches. Skim off three inches of the surface of the former into the latter, level the bed smoothly with the rake, and mark it off in rows eight inches apart. Plant the roots in the row eight inches asunder. Thus they will be squares of eight inches, and by planting the different colors alternately the bed will be beautifully diversified. Press each root gently down with the hand, that in covering up they may not be displaced. Put about four inches of earth over the crowns, which will make the beds from two to three inches higher than the alleys. The beds before and after planting should be gently rounded from the middle to each side, to let the rain pass off. Finish all by raking evenly, straighten the edgings with the line, and clear out the alleys or pathways.

Tulips like a lighter and richer earth than Hyacinths. Prepare the beds in the same manner, and so as the roots will stand nine inches apart each way; cover them five inches deep, as the new bulbs are produced above the old.

If it is intended to screen either of these while in flower, the beds should be made wider. Where two beds are to be shaded under one awning, make the alleys alternately two or three feet wide; the one two feet wide to be under the awning.

Polyanthus and Italian Narcissus may be planted in every respect as Hyacinths, only they require a lighter and richer soil.

Jonquils. Plant these in the same soil as Tulips, six inches apart, and cover three inches deep. They do not flower so well the first year as in the second and third, therefore should only be lifted every third year.

Anemones and Ranunculuses. These roots like a fresh rich, well pulverised, loamy soil. In light sandy soils they will languish in early droughts, and sometimes do not show their flowers fully. Cow manure is the best to use for enriching the soil. The whole should be well mixed and incorporated to the depth of eighteen or twenty inches. The roots may be planted in four foot beds, or in such a manner as a low frame of boards can be placed over them, when the winter sets in very severe. If intended to be shaded while in flower, leave a sufficiency of space in the alleys as directed for Tulips and Hyacinths. Do not raise the beds above one inch higher than the alleys, and from the surface level, in order to detain rather than throw off moisture. Then draw drills exactly two inches deep and six inches apart across the bed. In these place the roots, claws down, about four inches distant from each other. The roots of the Anemones are flat, and the side on which there are small protuberances is that from which the stems proceed. Press each root a little down with the hand, and cover all carefully, so as not to displace them. Smooth the surface with the rake, leaving the bed quite level.

Many other bulbous flowers might be added to the above; but as their culture is so similar, it would be superfluous to say more of them. They should be allowed space and depth according to the size of the bulb; a covering of two inches for the smallest, and five for the largest, will generally answer, and the intermediate roots in proportion. We will enumerate a few of the different kinds, Starch and Musk Hyacinths; of Narcissus, the Paper, Grand Monarque, and Nodding, with the two previously mentioned, are the most profuse in flower. Some of them will have above twelve flowers on one stem. Of Lilies, all the varieties of Martagon, Tigrinum and Chalcedonicum, with our native species and varieties. Of Iris, Lusitanica, two varieties, yellow and blue; Xiphioides, or Ziphioides; and Persica, are the finest of the bulbous sorts. Snowdrop, with several other minor bulbs.

All of these flowering bulbs may be advantageously planted in patches through the garden by taking out about one square foot of earth. Break it well, and if poor enrich it. Plant four bulbs in each of the same color, and the clumps that are contiguous to contain different colors.

Planting and Transplanting.—This is a very proper period to plant the beautiful and early flowering Pyrus japonica, now called Cydonia japonica. The blossoms are of a rich scarlet color. It is the earliest flowering shrub of the garden, and deciduous, though said by some to be "an evergreen." The plant is bushy, and well adapted for single plants in grass plats, or forming low ornamental hedges. There is likewise C. j. alba, a fine white variety of the same habit, and both are of the hardiest nature—also for the various species of Anemones and all the herbaceous Pæonias.

Of the latter there are above nineteen species and twenty two varieties, a few of which are particularly esteemed, and exceedingly handsome. P. edulis whitliji is a splendid large double P. edulis white; P. humei is a beautiful large double dark blush; P. edulis fragrans is a fine large double scarlet, rose-scented variety. These three plants ought to be in every garden. The flowers are full in the centre, and frequently above six inches in diameter; P. alba chinensis is said to be the largest and finest of the herbaceous sorts; color pure white, with pink at the bottom of the petals—it is a scarce variety; P. paradoxa fimbatria, fringed double red, and esteemed; P. officinalis rubra is the common double red. There are several other very fine single species and varieties, the flowers of which are principally red or blush, but none so magnificent as the above mentioned. This is perhaps a more favorable period to plant Dodecatheon than March; for its character see that month of this department. Asclepias tuberosa should now be planted.

Double Primroses, Polyanthus, Daisies, &c. Any of these that were planted in shaded situations in spring, and have been preserved through the summer, should have for their farther protection a bed well sheltered from the north-west, in which they should be planted four inches apart. Give them a few sprinklings of water in the morning, and have a temporary frame of rough boards put together to place over them during the severity of winter. The frame may be covered with the same in place of grass, which must be kept over them while they are in a frozen state.

Any other plants that are in the ground, which are intended to be protected with frames through the winter, ought to be immediately lifted and potted; and treated as directed for all new potted plants.

Grass and Gravel Walks.—The former should be trimly cut and well rolled this month, that they may appear neat all winter. Never allow decayed leaves to lay any time upon them, as they are apt to rot out the grass. The latter should be divested of every weed, and receive a firm rolling. Clear them at all times of leaves and other litter. These, if on a declivity, and have not a firm substantial bottom, will be subject to be cut up with every heavy rain. A break should be put in every twenty, forty, or eighty feet, to throw off the water. A strong plank will answer perfectly well, but in such situations we would prefer grass walks.

Planting Evergreens.—This month is the best period in autumn to plant these shrubs, and where there is a great extent to be planted it would be advisable to do a part of it now; but we give the preference to April, which see for directions.

General Observations.—When the plantings of bulbs, &c. are finished, every part of the garden should have a thorough cleaning. All annual flowers will have passed the season of their beauty; therefore, remove the decayed flowers, stems or haulm, and trim off the borders. Dig all vacant ground, especially that intended to be planted with shrubs in the ensuing spring, which ought to be dug from one to two feet deep. Roses delight in a deep light soil.

ROOMS.

Have a stage or stages, as described last month, in the situations where they are intended to remain all winter; place the plants on them from the first to the eighth of this month, beginning with the tallest on the top, graduating to the bottom. It is desirable to place flats or saucers under each, to prevent the water from falling to the floor, and the water should be emptied from the flats of all except those of Calla and Hydrangea. The latter while dormant should be kept only a little moist.

Previous to taking in the plants, they should be divested of every decayed leaf, insects, and all contracted dust, having their shoots nearly tied up, and every one in correct order. Every leaf of the Camellias ought to be sponged, and the plants placed in a cool airy exposure, shaded from the direct rays of the sun. If the flower buds are too crowded, picking off the weakest will preserve the remainder in greater perfection, and prevent them in part from falling off. Do not on any occasion keep them in a room where there is much fire heat, as the flower buds will not expand in an arid atmosphere. (See Green-house this month more largely on this subject.)

Of Bulbous Roots.—Those that are intended to flower in glasses should be placed therein this month and kept in a cool room. After the fibres begin to push a few shoots, the glasses may be taken to the warmest apartments to cause them to flower early. Bring a few from the coldest to the warmest every two weeks, and thus a succession of bloom may be kept up from January to March. Where the

roots intended for pots are still out of the ground, the sooner they are planted the better.

Cape Bulbs. All that are unplanted, and offering to grow, should be put in pots forthwith. Ample directions are given for the planting of these in the two preceding months.

Repot Rubus rosæfolius, or Bramble-rose. They should have pots one size larger than those they are now in. To make them flower profusely, when done blooming in May, divide them, and put only a few stems in one pot, and repot them in this month, as above directed.

General Observations. — Any herbaceous plants in the collection ought to be set aside, and the water in part withheld. When the stems and foliage are decayed, the plants may be put up in a cool cellar, where they will not be in danger of frost, and be permitted to remain there until they begin to grow; then bring them to the light, and treat as directed for these kinds of plants. Deciduous plants may be treated in a similar manner.

Ill Effects of the Transplantation of Trees. — I submit for the consideration of your readers the inquiry, or doubt, whether orchards, or fruit trees to any large number, ought ever to be transplanted in any soil. But knowing that much may depend on the soil, and particularly upon the substratum, I should like to see published the opinions of others, who have attentively observed the growth and manner of trees, raised in the different modes of transplanting, and from seed planted where the tree is to stand and grow for life. This suggestion is made with special reference to the larger kinds of trees, which take years to bring them into mature bearing, and should be expected to live long, to reward the expense and trouble of rearing. My own observations, for not less than forty years, have confirmed the opinion which I have entertained for thirty-five years, that upon such soil as is common in Virginia, from tide water to the Ohio river, no trees of large growth ought ever to be removed from the places where the seed came up, or be transplanted, except for some particular purpose, such as the introduction of new or desirable kinds, or the removal from places inconvenient or improper for them to grow in, to other places more desirable. The difference in the time it will take to raise orchards to good bearing state, by the different modes of transplanting, or by planting seed at once in the orchard, and grafting or budding on the young trees, is perhaps much less than would be supposed, when we consider that it generally takes several years to raise young trees in the nursery, to the largest size fit for transplanting. But the advantages in favor of the tree which grows to full maturity where it came up from the seed, it appears to me, are manifestly greater than those obtained by bringing a transplanted orchard somewhat earlier into bearing. There is no fact better established by experience and observation, than that seedling trees, even when transplanted, are much more vigorous, and outlive graffs; and my observation leads me to the conclusion, that seedling trees, which stand where they came up, as much outlive those seedlings which have been transplanted, as the latter outlive transplanted graffs; and I am inclined to think, that no grafted or budded tree is ever as sound and healthy as a seedling tree, or one the roots and branches of which are all of the same kind. I have scarcely ever noticed a budded tree, the wood of which did not become doated earlier in life than seedling trees of the same kind generally do. I would not however have it understood, that I consider it improper to transplant all such trees as may be convenient, or desirable for use or comfort, to obtain any necessary supply of fruit a few years earlier than it could be raised by planting the seed. The history of my observation and experience follows. About the year 1784, my father planted out an orchard of grafted trees, apples and pears. For several years the young trees prospered and grew rapidly, till about the year 1790, when they began to die in every part of the orchard. It was made my business, though a small boy, to dig up the dead trees in the orchard, to trace every root that could be found, and remove entirely out of the orchard every fragment of root that could be traced to the greatest depth and extent to which the roots had ramified. This operation continued from year to year, till about the year 1800, when a number of apple trees died, and were thus taken up, some of which measured near a foot in diameter. There was never a root found by me, which had penetrated more than about a foot deep in the ground. It had also been made my business to raise seedling nurseries of young apple trees, and to dig them up when about the size of large goose quills, to be used as stocks for hand grafting, to be planted out again, after being grafted, for the purpose of raising grafted nursery trees, to replenish the orchard. Sometimes when I wished to hasten the growth of my young graffs, I dug up the seedling stocks, about as large as goose quills, with all the tap roots that could be obtained by digging to the greatest depth that the tap roots had penetrated the substratum, and generally found that they had descended about twenty-seven inches, and in a few cases thirty-six inches. This led to the conclusion, that the tap root, once cut, never attempted to grow downward again, or if it did attempt to grow downward, its efforts were too feeble to penetrate even a moderately hard substratum: that tap roots, growing so deep from small trees, must go much deeper from large trees, and steady and support them greatly against storms, as well as to render the tree more healthy, by enabling it to sustain uninjured the severest drought, particularly where orchards have been planted upon hillsides; and from the necessary tillage of the earth, the surface will be washed and removed downhill, gradually leaving the extended roots of the trees exposed near the surface, to suffer greatly in dry seasons. I would not advise to plant trees on hillsides, but a great many people must plant them there, or not have them at all—neither would I advise to plant on perfect level land, upon which, or in which, the water would be retained, so as to sob the land, and injure the roots of the trees. Charles Woodson.—[Farmers' Register.]

Cheese, Butter, and Pork.—The Farmer's Gazette doubts whether any town in this State, in relation to the above articles, can boast of greater or better produced than the town of Barre, in Worcester county, and in support of this opinion presents the following as the quantity sent to market from that town in 1833; Cheese, 652,656 lbs.; butter, 75,141 lbs.; and pork, 292,989 lbs.—[Greenfield Gazette, Mass.]

Selecting and Breeding Cattle. — The first sentence in the following, from Dickson's Cattle Manager, contains great encouragement for those who wish to acquire a reputation as breeders of our native stock.

The change which is capable of being made in any breed of animals by judicious and proper selection, is such as can scarcely be conceived, except by those who are sufficiently experienced in the business, as the beneficial consequences of it are supposed to arise from other causes. It is evident, that for the purpose of breeding from, no animal can be fully depended upon, unless it be really good in itself, and have, in addition, been quite well bred in all the several stages of its ancestry.

As all the breeds and varieties of animals, while in their natural state, and before they have undergone any of their beneficial changes of art, are defective in some respect or other, and as individuals of the same breed are very differently formed and proportioned in their several different parts, care should be taken to select from whole herds, flocks, or collections, such only as are early in coming to perfection, and have other desirable properties, which give them superiority over others in the views of the breeder. Then, in proceeding with the produce even of these parents, the best and most suitable in every respect of each sex are to be further selected and taken as the future improving stock, while the remaining inferior portions are steadily to be refused as improper; and by thus rejecting every animal that is bad, inferior, or unfit for the purpose, great improvements and advances towards perfection in the breeding of animals may be made.

As the offspring that is produced by "some animals is very unlike themselves," it is "a good precaution to try the young males with a few females, the quality of whose produce has been already ascertained:" as in this way, and by this kind of selection, "the sort of stock produced, and the description of females to which they are the best adapted," will be the most certainly known, and of course the practice afterwards will proceed in the most perfect manner. Proper selection in breeding and providing male stock has tended to produce the greatest improvement in every kind of animals to which it has been applied.

There can be little doubt but that, by this mode of selection in the practice of breeding, every desirable property in all kinds of animals may be promoted and improved. But the selecting for one single property should be avoided as much as possible.

Reports on the Comparative Advantages of feeding Live Stock on Raw or on Prepared Food. [From the Prize Essays and Transactions of the Highland Society of Scotland.]

In 1833, the Society, considering the importance of determining the comparative advantages of feeding live-stock on raw or on prepared food, offered a piece of plate of thirty sovereigns value, for the best report, founded on actual experiment, made for that purpose, on a number of oxen or heifers, not fewer than six, the animals to be of the same breed, age and sex, and the term of feeding not less than three months. At the same time, a premium of ten sovereigns was offered for a report on the feeding of ten or more swine of the same age and breed. Five reports were received. The premium for horned cattle was adjudged to Mr. Walker, Ferrygate, Haddington, and that for swine to Mr. Boswell, of Balmuto. Extracts of the other reports, to the authors of which the thanks of the Society were voted, are also given.

Report of an Experiment on the Feeding of Six Heifers and Four Oxen. By Mr. Robert Walker, Ferrygate, Haddington.

> Here, ample barn-yards still are stored
> With relics of last autumn's hoard,
> And firstlings of this year.

On the 20th day of February, 1833, we put up to feed six two-years-old heifers, bred by ourselves, got by a thorough bred short-horned bull, out of common country cows, and as nearly equal as could be selected from a large lot, both in point of weight and feeding qualities. At the same time, we also put up four two-year-old stots, part of a lot purchased at Daikeith October Fair from Mr. James Haliburton, cattle-dealer, at Hawick.

From the circumstance of both lots having been, some time previous to 20th February, on full keep,—the heifers on common white globe turnips, with an allowance of 3 lbs. of bruised beans each beast per day, the stots on good purple-topped Swedish turnips, and the same quantity of bruised beans per day,—we were enabled to make a better selection than we could have done from any lot of lean cattle, because they had then fully begun to display their feeding qualities. Both lots previous to 20th February were kept amongst

others, in the open court-yard with sufficient shedding.

On being put up, preparatory to this experiment, the heifers were divided into two lots of three each, as nearly equal as possible, both in point of weight and apparent feeding qualities, and put into an open court-yard with sheds, which had been divided with a railing for the purpose of keeping them separate, and lots were cast to determine which three were to be put on raw, and which three on the steamed food.

The same preparatory process was followed with the stots, equally divided, two and two in each lot,—only with this difference, that the stots were kept entirely under cover of the sheds, but loose, and having abundance of room to walk about, with plenty of light and air.

The heifers were allowed as many purple-topped Swedish turnips topped, rooted, properly cleaned, and cut into pieces, so that they could get them into their mouths, as they could consume, with 3 lbs. of bruised beans and 20 lbs. of potatoes each beast per day, in addition to the turnips, with half a stone of straw each.

The stots were allowed as many of the same sort of turnips as they could eat, with 4½ lbs. bruised beans and 30 lbs. of potatoes each beast per day, with half a stone of straw each. That is to say, the food of the stots and heifers was the same, only with this difference, that the stots were allowed 1½ lbs. beans and 10 lbs. potatoes more per beast than the heifers, each day.

The mode of preparing the food was steaming, by placing a tub, with holes in the bottom, above a common furnace pot or copper, used for making the harvest porridge. The tub was drawn off and on the top of the pot by a block and tackle, attached to a sort of crane, for shifting the tub into the position when wanted. The tub used for preparing the food of the three heifers was in diameter at top 3 feet 1½ inches, at bottom 2 feet 10½ inches, in depth 1 foot 8 inches. The tub was filled as full as it would hold in the first place with turnips, which required from five to seven hours to steam; the potatoes were put in on the top of the turnips, about an hour or three-quarters of an hour before being taken off, when the turnips had fallen so much down or lost bulk sufficient to admit them,—the beans were put in last, from twenty to thirty minutes before being taken off,—and all three, when taken off, were thrown into other tubs with a shovel, and well mixed.

The food for the stots was prepared exactly in the same manner, but in a separate tub, at an adjoining farm. The size of this tub was less than the other, being in diameter at top 2 feet 7½ inches, at bottom 2 feet 4 inches, and in depth 1 foot 7½ inches. The food in both cases was given to the cattle in wooden stalls or troughs, always properly cleaned once each day.

Both lots, the cattle on steamed as well as raw food, were fed three times per day—at day-break, at noon, and lastly an hour before sunset.

The bruised beans were given to the lots on raw food at noon, the potatoes one-half in the morning and the other half at noon.

In both cases, the greatest attention was paid to give both those on raw and those on steamed food as much as they could eat, but no more, so that the food might be as nearly as possible eaten up at the times of refeeding, this being, in the opinion of the reporter, always a prime consideration in every case of feeding, so that the stalls may be always kept clean, and regularly cleared of the refuse.

The apparatus for weighing the cattle is simply a common steelyard, such as is used at the toll-bars in the county of Edinburgh for weighing carts. The cattle stand on a flat board, which is covered with a little chaff or straw, to prevent the treading of their feet making a noise to frighten them—the board being laid upon blocks of wood, which are put into the frames where the cart-wheels stand, in weighing carts, and elevated just sufficiently high to make the board swim clear of the frame-work of the steelyard. The cattle walk on to the board, which is surrounded on three sides with hurdles or gates, to keep them steady on it during the time they are weighing, the servants standing behind at the open end where the cattle enter. With this very simple apparatus, one might engage to weigh ten cattle in as many minutes—the cattle in general going as easily off and on the steelyard as moving a little backwards and forwards on plain ground.

We very soon discovered that the cattle on the steamed food consumed considerably more turnips than those on the raw food, having laid down for the three heifers on raw food two cart-loads, containing together 25 cwt. 1 qr. 14 lbs. of turnips, and at the same time the like quantity for the three heifers on steamed food; but at the end of four days, very few turnips were left to put into the steam-tub, while apparently little more than the half of those laid down for the raw food was consumed. We then added another load of 12 cwt. 2 qrs. of turnips to the steam; and at the end of seven days, the three heifers on the raw food had consumed the quantity laid down for them, while the three on steamed food had consumed the same quantity, and very nearly the whole of the additional quantity of 12½ cwt., at least all but about a half tub, or 250 lbs. of raw turnips; and in order to be very correct, we proceeded to weigh the steamed turnips which were left unconsumed, when we found they only weighed 195 lbs. This circumstance of the weight being much less than we expected, put us on making a series of experiments of the difference of the weight when put in raw and after being steamed, the result of which will be afterwards detailed, and also in ascertaining, by a more lengthened experiment, the relative quantities of food consumed by each lot of cattle.

On this first and short experiment during one week of seven days, the three heifers on raw food had consumed, as before stated, 25 cwt. 1 qr. 14 lbs. of Swedish turnips, 3 cwt. 3 qrs. of potatoes, and 63 lbs. of bruised beans, being at the rate of 135 lbs. of turnips, 20 lbs. of potatoes, and 3 lbs. of bruised beans, for each beast per day. While the three heifers on steamed food had consumed in the same space of seven days, about 37 cwt. 16 lbs. of turnips, being at the rate of 190 lbs. of turnips, 20 lbs of potatoes, and 3 lbs. of bruised beans, per day for each beast: a difference of 55 lbs. of turnips consumed by each beast on steamed food per day more than what was consumed by those on the raw food.

On a pretty lengthened experiment made on the difference of the weight of turnips before and after being steamed, we found the result to be as follows: Upon turnips which had been taken from the ground in the early part of February, when they were full of juice, weight when raw 5 tons 8 cwt., after being steamed 4 tons 4 cwt. 3 qrs. 16 lbs., being a loss of weight in the process of steaming of 1 ton 3 cwt. 12 lbs.; or in round numbers, the turnips may be said to have lost nearly one-fifth of their weight in the process of steaming, and further, we may mention, that they also lost about one-fourth or one-fifth of their bulk. But at an after period, when the turnips were lifted from the ground after the middle of April, the loss of weight in the steaming process was not near so great, not being one-sixth of their raw weight in place of one-fifth as formerly stated. The loss of weight on steaming potatoes was a mere nothing, not being more than $\frac{1}{30}$th part. Still, although the cattle at this latter period, viz. the end of April and beginning of May, did not consume quite so much weight of turnips, they consumed fully more bulk. The turnips having lost considerably in weight in proportion to their former bulk, it now requiring a larger cart-load to weigh 16 cwt. than it did in the month of February; this circumstance being easily accounted for, because the tops of the turnips were now vegetating rapidly, and the bulb losing its former sap. But in every case throughout the whole course of the experiment, the difference consumed by the cattle on steamed food above those on raw was about 55 lbs. of turnips per day for each beast.

As formerly stated, the stots were allowed, in addition to the turnips, 30 lbs. of potatoes each, and 4½ lbs. of bruised beans, being 10 lbs. of potatoes and 1½ lbs. of beans each beast more than the heifers per day. In this case, the result was exactly similar to that of the heifers, the stots on the steamed food consuming about 55 lbs. per day of turnips more than those on the raw food each beast.

The steamed food being 94 cwt. 14 lbs. of turnips for twenty-eight days of two cattle, about 195 lbs. per day, and the raw food being 70 cwt. for the same time, about 140 lbs. per day. The twenty-eight days alluded to were the last twenty-eight days of the experiment, from the 22d of April till the 20th May.

We may now be permitted to state, that our experiment might very easily have shown different results; that the cattle on steamed food might have been shown to have consumed less instead of more food, and, as a necessary consequence, a great shortcoming in the article of improvement, because in the very outset of our experiment, we discovered that it was necessary that the steamed food should be always fresh, or, in other words, newly done, and if it was old done, cold and sour, the cattle would hardly eat it unless when very hungry; in short, the quantity they would consume might have been made to agree to the fresh or sour state of the food when presented to them. If warm and newly done, they would eat up their feed with avidity; if cold and sour, they would not taste it, unless compelled by hunger. We therefore resolved to give them their food always as newly prepared as possible, thinking that the first object of our experiment was to fatten both lots of cattle as well as we could, and afterwards to calculate the expenses. We are quite aware, that to have done a large quantity at one steaming, would have lessened the expense both of coal and labor, and also, by getting sour before being used, saved a vast quantity of food. But we are equally well aware, that by so doing we never could have fattened our cattle on steamed food; and on the other hand, had we restricted our different lots of cattle to the same weight of food, those on steamed food would not have had as much as they could consume, provided the steamed food was properly administered; and therefore, by a parity of reasoning, the cattle on the steamed food could not make the same improvement as they would have done on full keep. Our object has therefore been, as formerly stated, to fatten both lots of cattle, and afterwards calculate the different expense.

A small quantity of salt was allowed the cattle as a sort of condiment amongst their food. Those on steamed food had it amongst their food when being taken from off the steam; those on raw food had it mixed with the bean-meal, at the rate of about ⅛th of a lb. each beast per day. They did not get any salt for the first ten days, but after being used to it for three weeks, we tried the cattle on steamed food with one feed without salt. They did not seem to relish it so well: we then put a little salt on their food in the stall, and they at once began to eat greedily; both those on steamed and those on raw food were evidently fond of the salt. We used the salt at the first, in order to prevent the steamed food from getting so soon sour, which had a very decided effect in this respect. In our calculations of the value of keep, we have not stated any thing for straw consumed by the cattle, as they were frequently supplied with litter of the same sort of straw, not deeming the straw of any other use than being made into dung.

MANUFACTURES OF IRELAND.—The history of the manufactures of this country is in part a recital of its wrongs. The nature of the soil and climate is in favor of pastoral pursuits. This, in connection with some early restrictive measures, has prevented Ireland from ever extending its manufactures much beyond the wants of the population. As early as the reign of Edward III. a brisk trade was carried on with Italy in woollens, particularly in the Irish caddow, or woollen coverlet. A colony of the Palatines, in the reign of James I., formed their chief settlement at Carrick on Suir, and gave a stimulus to the manufacturing interest, and afforded employment for a large number of the surrounding inhabitants. Even after the prostrating wars of 1641 and 1688, the woollen trade was so flourishing that the jealousy of the British manufacturers was excited to so high a degree, that they procured an address from both houses of Parliament to William III., "to use his utmost diligence to hinder the exportation of woollens from Ireland, except to England, and generally to discourage the woollen manufacture in Ireland." Acts were passed in accordance with this petition. In 1779, however, the prohibition against exporting woollen cloths was repealed, and the trade revived. In 1812 the woollen cloth imported from England amounted in quantity to one-third, and in value more than one-half of all that was consumed. An existing duty of 8½d. per yard, on all qualities, served as a prohibition of the coarser kinds; and hence the reason why Irish manufactures are confined principally to low priced goods. In 1823 the protecting duties were unexpectedly repealed. This was followed by a great influx of English goods of a newer fashion, and an almost total ruin of Irish manufactures. Those dependent on the factories were reduced to depend on charity, or compelled to emigrate. Most of the woollen manufactories now existing are in the vicinity of Dublin. These produce goods to the amount of £200,000 annually.

The linen manufacture arose in part on the ruins of the woollens. In early times, the Irish gentry were profuse in the quantity of linen used in their inner garments: a shirt of a man of rank contained twenty or thirty yards. Great exertions were made by patriotic individuals to improve this branch of Irish industry, particularly by the Earl of Stafford, who, when Lord Lieutenant, embarked £30,000 of his own fortune, and by the Duke of Ormond. Since their days, the trade has been encouraged by legislative enactments. Among the expedients adopted to promote this manufacture, when in its infancy, the use of linen scarfs and hat bands at funerals was introduced.

Notwithstanding great exertion, Ireland is unable to raise its own flax-seed. That which is produced is of an inferior quality. In 1821 there were imported from

America, - - -	36,176	hhds.
Prussia, - - -	8,424	"
Holland, - - -	7,308	"
Britain, - - -	5,934	"
	57,842	hhds.

On the revocation of the edict of Nantes, the silk manufacture of Ireland had its origin. Extensive trade was carried on in worsted and mixed silk; but the fluctuation of female fashion caused a decline; and now the silk trade of Ireland is comparatively very limited. In 1825 the Earl of Liverpool, then prime minister, made great exertions to rear the silk worm in the south of Ireland, but the climate was found too chilly and moist. In 1784 the first cotton factory was erected in the neighborhood of Belfast. This trade has been fostered by government, and has increased, while the linen manufacture has necessarily declined. The manufacture of metals is limited, owing to the scarcity of fuel; but that of ardent spirits flourished in spite of severe enactments against illicit distillation. In ten years, ending in 1818, there were 16,244 unlicensed distilleries destroyed, in which 36,965 gallons of spirits, and 47,843 barrels of malt, were seized and destroyed. In the subsequent ten years, there were 41,645 distilleries, 47,843 gallons of spirits, and 156,636 barrels of malt, destroyed. Nothing but the temperance principle has made any material reduction in the use and manufacture of this injurious article.

AGRICULTURE IN BAVARIA—ITS IMPROVEMENT BY THE POLICY OF GOVERNMENT.

The following article deserves general consideration:

Bavarian agriculture, previously to the first French revolution, was, according to all accounts, less advanced than that of any other state in Germany, and, indeed, remained stationary for ages. By far the greater part of the land in cultivation was the property of the religious establishments; and the capital, Munich, was, as the German name (Munchin) implies, the city of monks. When, however, the estates of the religious establishments were sold, they were chiefly divided into lots so small, that almost every individual who was head of a family became a purchaser. These purchases were made at very low prices, on long credits; and a very great number of them, perhaps the greater number, were agreed to be paid for by the occupant in a terminable annuity: that is, he paid a fixed rent for a certain number of years, after which the land became his own freehold. The laborers who had thus become proprietors, had, for the most part, previously cultivated the same lands for the religious establishments, and, therefore, the external change was at first hardly apparent. Every estate, however, abounding in timber and stone for building, and a great part of the country being on a basis of lime stone, rock, or limestone gravel, facilities were readily afforded for a laborer to enlarge his cottage, and to add to it the necessary agricultural buildings. Scarcely any outlay was required from him but labor, and, as the produce was entirely for his own benefit and for that of his family, his exertions were extraordinary. By degrees, cottage-dwellings, of a somewhat improved description, and small farm-houses and farmeries, appeared in those parts of the country where the soil was richest; not, however, detached, as in Britain, but chiefly congregated together in small villages. The system of culture did not, at first, improve as a system; but the common operations of the established practice being more carefully performed, better crops were produced. Ultimately, however, the system became improved, in consequence of the operation of the national education that was established when the monasteries were put down, and by the teaching of agriculture and gardening, both by books and examples, in these schools. One of the first consequences was an improved rotation of crops. Almost the whole of the details of agricultural improvement in Bavaria have originated with M. Hazzi, an agricultural writer, and editor of an agricultural journal in Munich. The activity and patriotic benevolence of this gentleman are beyond all praise. It was chiefly through his exertions that a piece of ground was added to every parochial school in Bavaria, to be cultivated by the scholars in their leisure hours, under the direction of the master. In these schools, Hazzi's Catechism of Gardening, of Agriculture, of Domestic Economy and Cookery, of Forest Culture, of Orchard Culture, and others, all small 12mo volumes, with wood cuts, sold at about 4d. each, are taught to all the boys, and those of gardening, the management of silk worms, and domestic economy, to the girls. Since these schools have come into action, an entirely new generation of cultivators has arisen, and the consequence is, that agriculture in Bavaria, and especially what may be called cottage agriculture and economy, is, as far as we are able to judge, carried to a higher degree of perfection than it is any where else in the central states of Germany; at all events, we can affirm that we never saw finer crops of drilled Swedish and common turnips, or finer surfaces of young clovers, than we observed along the roadsides in October and November, 1828. The fences, also, were generally in perfect order, and a degree of neatness appeared about the cottages which is far from common either in France or Germany. These remarks are not the result of observations made, as is frequently the case, from the cabriolet of a public diligence, but from deliberate inspection, and from entering many of the cottages and schools. To enable us to do this, we travelled, every where in Germany, in a private carriage, and never in the dark. We had also, as we have before stated, the advantage, while in Munich, of constant intercourse with M. Hazzi, M. Sckell, and other members of the agricultural society; with the chief engineer, Baader, who had been many years in Scotland; with Baron Eichthal, the proprietor of a large estate, on which he has introduced the Scotch husbandry, and with whom we were acquainted in London; and with his very intelligent tenant, an East Lothian farmer. The result of the whole of the information procured and of the observations made, is, that we think that the inhabitants of Bavaria promise soon to be, if they are not already, among the happiest people in Germany. The climate of the country will prevent its agriculture and gardening from advancing beyond a certain point, but to that point both will very soon be carried.

So desirous is the government of improving not only the agriculture, but even the face of the country, that they have a standing commission, consisting of counsellors, engineers, architects, and the landscape gardener Sckell, solely for the purpose of devising improvements in the direction of public roads, canals, bridges, public buildings, and gardens, national forests, but, above all, for lining the public roads with trees. These trees are, in some places, in the suburbs of towns, chiefly ornamental; in others they are fruit trees, or mulberry trees cultivated for the silk worm, (a catechism on the management of which is also published by M. Hazzi;) and, where nothing more profitable or ornamental will grow, forest trees. An extraordinary degree of attention is paid to the mile-stones, and to the guide-posts, neither of which are wanting on any road. The guide-posts are generally painted black with the letters in white or red, the black contrasting better with the snow, which, in some parts of the country, covers the ground for six months in every year. Some of the mile-stones have a bench of stone, forming a plinth or base around them, as a seat; others, where stone is not so plentiful, have a semi-circular area of turf around them, bounded by a bench of the same material, as a seat, and planted behind with poplars or other trees. The neatness with which these turf benches, and the ditches or other fences, and also the grass margins by the sides of the roads, are kept, far surpasses any thing of the kind which we have ever seen in Britain. With us, if any thing of this kind is met with in the public roads, it is chiefly the result of accident, either in the situation or circumstances of the road; or arises from the ap-

pointment of a road surveyor, who happens to have at once some taste, and more than ordinary facilities for displaying it. In Bavaria the whole is the result of design and system, the entire management of the roads being in the hands of the government. The same ought certainly to be the case in this country; for, otherwise, it is utterly impossible to adopt one general system of improvement.—[Weekly Dispatch.]

Loss of Weight in cooking Animal Food.—It is well known that, in whatever way the flesh of animals is prepared for food, a considerable diminution takes place in its weight. As it is a subject both useful and curious in domestic economy, we shall give the results of a set of experiments which were actually made in a public establishment: they were not undertaken from mere curiosity, but to serve a purpose of practical utility. 28 pieces of beef, weighing 280 lbs., lost in boiling 73 lbs. 14 oz. Hence the loss of beef in boiling was about 20½ lbs. in 100 lbs. 19 pieces of beef, weighing 190 lbs., lost in roasting 61 lbs. 2 oz. The weight of beef lost in roasting appears to be 32 lbs. per hundred lbs. 9 pieces of beef, weighing 90 lbs., lost in baking 27 lbs. Weight lost by beef in baking is 30 lbs. per 100 lbs. 27 legs of mutton, weighing 260 lbs., lost in boiling, and by having the shank-bones taken off, 62 lbs. 4 oz. The shank-bones were estimated at 4 oz. each; therefore the loss in boiling was 55 lbs. 8 oz. The loss of weight in boiling legs of mutton is 21 lbs. per 100 lbs. 35 shoulders of mutton, weighing 350 lbs., lost in roasting 109 lbs. 10 oz. The loss of weight of mutton in roasting was 31⅓ lbs. per 100 lbs. 16 loins of mutton, weighing 141 lbs., lost in roasting 49 lbs. 14 oz. Hence loins of mutton lose by roasting about 35¼ lbs. per 100 lbs. 10 necks of mutton, weighing 100 lbs., lost in roasting 32 lbs. 6 oz. From the foregoing statement, two practical inferences may be drawn: 1st, In respect of economy, it is more profitable to boil meat than to roast it; 2d, Whether we roast or boil meat, it loses by cooking from one-third to one-fifth of its whole weight.—[Philosophical Magazine.]

Disposing Plants in Masses.—The system of disposing plants in masses, so frequently and ably advocated in this Magazine, is becoming very general, and certainly produces a much better effect than the tedious monotony of an indiscriminate mixture. In the practice, however, of this superior method, it should be remembered that the groups and masses ought to be considered as parts of a whole, and, as such, should harmonize and unite with each other, with regard to form and color. Without attention to this point, the several disunited and independent parts will no more form a gardenesque landscape, than the colors arranged on a painter's palette will of themselves form a picture. I have known more than one small garden spoiled by a disregard of proportion, the shrubs and flowers being disposed in groups of far too large a size. In such a situation, a single plant, or a group of two or three, must be considered to bear the same proportion to the whole, as much larger masses or groups bear in the case of a park. Although I approve, as I have said above, of the principle of placing different species in groups and masses, I think that there are cases in which this, like all other principles, may be carried too far. In a small flower-garden which I very much admire, I have seen a group, composed of myrtles and China roses, planted alternately in quincunx order, the larger plants being in the centre; and, in my opinion, a better effect was produced than if the two species had been in separate masses: the rich green color of the myrtles' leaves, forming a ground to the beautiful white of the flower; the light and elegant foliage and pendant bloom of the rose; the mingled color, and the associations connected with both, made an impression upon me which I shall not easily forget. In the same garden there is a group consisting of an acacia, a sumach, and a laburnum. The light feathery elegance of the acacia, the broader and more shadowy plumes of the sumach, and the pendulous clusters of flowers of the laburnum, compose a little picture of the most highly finished character.—[Loudon's Mag.]

Excretory Organs of Plants.—In a late English publication we find the following corroborative proof of the excretory office of the roots:

In a variety of experiments made with the hyacinth raised in a bulb glass, and supplied with distilled water, I constantly found that the water in which the fibrils were extended became soon impregnated with carbonic acid gas, when excluded from all external sources of its production; and, by the addition of a little lime-water in the first instance, I sometimes had an interesting deposition, on the sides of the glass, of minute rhomboidal crystals of transparent carbonate of lime. It seems to me, therefore, that the functions of the root are twofold, and that it is composed of two classes of organs, one of which act as absorbents, and the other as excretory vessels: the former appear to be resident in the spongelets, and the latter in the cortical pores. It is worthy of remark, as connected with this question, that colored fluids, which find an easy ingress through the spongelets, will not pass through the cortical orifices. The superfluous egesta occasioned by an unusual richness of the soil cannot be evolved in a sufficient ratio by the foliage. During the presence of the sunbeams, leaves cast off oxygen, while the carbon of the carbonic acid gas is appropriated and assimilated: but it is by no means probable that the entire quantity of carbonic acid gas which rises in the stem during the day can be constantly decomposed amid the various changes of light and shade, to make no mention of the liquid matter which has been evolved.

New Improvement in Washing Machines.—One would suppose that Yankee ingenuity had become well nigh exhausted upon washing machines: but we have lately examined a new invention, or rather a modification of an old system, by Mr. James Pullen, of China. His plan is upon the common fluted washboard, but his flutings are made of sheets of copper, zinc, tin—or they may be made of glass, earthen, or similar durable and smooth substances. These sheets or substances are fastened to boards, and used as such boards are commonly used. Now where's the improvement?—1st, In durability. 2d, In its smoothness. And 3d, Ease in performing the operation of rubbing. A common washboard does not last long—it soon gets rough, of course wears out the clothes and makes harder work; they get warped and split, are then patched up with shingle nails, which get rusty, and make a rickety, weak concern; the women scold, and the poor husband has to march off and buy a new one. The metallic rubber will last a long life time, if a little care be taken in drying it after using; for when worn a little on one side it may be turned and worn on the opposite side, and in the contrary direction.

We like the simplicity of the concern. Our washing machines have been too complicated. The inventors seem to have considered it necessary to show their skill in combining the greatest number of mechanical modifications in one piece; and the greater the array of cog-wheels, cranks and rollers, the more ingenious has the machine been considered, and the more likely to do its duty without hands. Disappointment has of course followed. This improvement is simple, and promises no more than it can perform. It does not promise to indulge idleness, and to do away the labor of washing; but to lighten and facilitate that labor, and render it a pleasure, rather than a dreaded task. Mr. Pullen has left one of them at our office for the inspection of those who wish to examine it.—[Maine Farmer.]

Happiness.—The object which mankind have in view is happiness; and yet not one in a thousand gives it a rational investigation, nor shapes his course of life undeviatingly for its attainment. The passions are like the wind—sometimes tempestuous—at others, deadly calm, like volcanic slumberings—sometimes, gently wafting us on towards our haven—at others, urging us with unrelenting violence. Our judgment is our helm; it must ever be attended to, and never abandoned. Whatever may be the course or state of the wind, wakeful must be the helmsman. After all this has been done, how many accidents happen, and how many shipwrecks occur. And even when we have reached the haven, how irrational it is to place our happiness on the result of our operations in port!

The Deodar Cedar.—We have received a small quantity of the deodar seeds from Mr. Auben of the East India House, sent by direction of the Chairman of the Company. Along with them, Mr. Auben forwarded extracts from letters from Dr. Wallich one of which we quote: "The deodar cedar is, of all others, the most desirable to introduce into England. It is equal in stateliness and magnificence to the Lebanon cedar, and far superior to it in the fragrance of its wood, which is incredibly durable. The tree will stand the climate of the North of Europe, beyond all doubt." Dr. Wallich, besides again noticing that the seeds had germinated with him in ten days in the open ground, has added, "and under glass, in my own room, in eight days."—[Loudon.]

Norcross' Diving Apparatus.—Mr. L. Norcross, of Dixfield, gave us, last week, an interesting exhibition of his apparatus, which enables one to go under water and remain as long as he pleases, in search of any articles at the bottom; and then come up neither wet nor drowned. This is effected by means of a dress of cloth saturated with India rubber, which is put over the body, covering all parts. A large helmet of lead is put over the head, which rests upon the shoulders, and is made tight with the dress. Glass is put in front of the helmet to see through, and two tubes affixed to the top, through which the air circulates. These tubes are of India rubber cloth or hose, and must of course be long enough to reach from the bottom above the water. To one of them is attached a forcing pump through which air is propelled by some one at the surface; the other lets the air escape, so that there is a constant circulation of fresh air. Mr. Norcross has adopted a peculiarly simple mode of obviating the great pressure of the water in preventing this circulation. A small portion of tube for the escape or return of the air is made of leather, and the pressure of the water of course flattens or shuts it together, and thus keeps the air in until the forcing pump throws in sufficient to overcome this pressure, when it passes out. This part then acts as a valve. The person therefore is enclosed in an atmosphere, and can breathe, though covered over by the "vasty deep," nearly as well as in the atmosphere. We are aware that many plans have been devised for descending into the water for the purpose of carrying on operations below the surface, but we think this plan an improvement.

Mr. Norcross also invented the process of preparing the India rubber which he puts on: this may or may not be the same preparation which has heretofore been used; but as those who have used it keep it a secret, credit is not the less due to him for discovering the mode used. As he has spent much time and money in bringing his invention into practical use, and been subject to much trouble for want of suitable assistance, we hope that he will ultimately be well rewarded for his ingenuity.—[Maine Farmer.]

The Art of Wine Making—the Gervais Fermenting Apparatus Improved.

[From the London Mechanics' Magazine.]

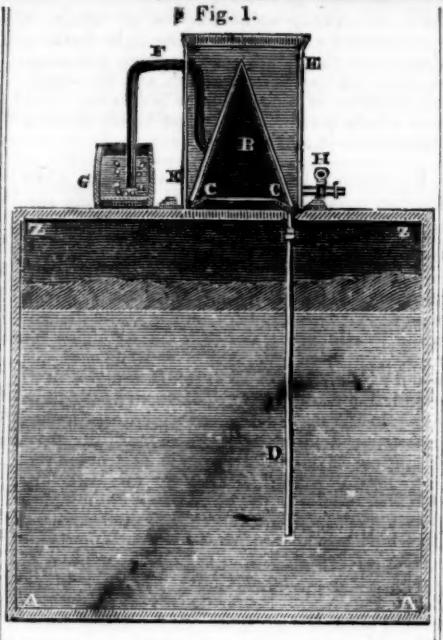
Mr. Booth, whose treatise on the Art of Brewing we lately noticed,* has just produced another treatise on the kindred "Art of Wine-making;"† or, to speak more properly, a volume supplementary to the former. The general principles, and many of the manipulations, of the two arts are so similar, that the business of this new treatise consists mainly in pointing out those peculiarities by which the manufacture of wine differs from that of beer; and the two treatises are so intimately connected, that the one cannnot be profitably perused without constant reference to the other. As Mr. Booth himself observes, "the four parts of the Art of Brewing and these two of Wine-making, with the Appendix on Cider and Perry, may be considered as one continued work, embracing a general system for the manufacture of vinous liquors."

Mr. Booth in his present work treats first of "Wine-making in Warm Countries," and next of "Wine-making in Cold Countries;" or in other words, of foreign and home-made wines in all their numerous varieties. He gives, under both these heads, a great deal of very useful (though not often very novel) information, derived from the most authentic sources, and interspersed with much shrewd observation and judicious advice. One of his best chapters relates to the much contested point, whether open or close tuns are best suited to the process of fermentation? The ancient practice of the wine provinces of France was to leave the tuns open, or, at least, to cover them very slightly; but at the beginning of the present century, a Mademoiselle Gervais introduced a close fermenting apparatus, (afterwards patented in Great Britain by Messrs. Deurbrouck and Nichols,) which having the good luck to be patronised by the celebrated Chaptal, has become all the fashion among our French neighbors. According to the partisans of this new method, it serves not only "to condense, and to return into the fermenting fluid, all the aqueous, spirituous, and balsamic vapors which are usually carried off with the carbonic acid gas, and thereby to enrich the wine, by preserving entire its spirit and perfume," but actually augments the quantity of wine obtained, by from 9 to 15 per cent. Mr. Booth does not altogether dispute these conclusions, but he insists that they are prodigiously exaggerated. He maintains that the increase of volume is "not above one in two hundred;" that "this increase is caused by the condensation of all the gas that is evolved during the whole progress of the fermentation;" and that the proportion of this condensation, which is spirituous, is probably "very small."

We shall leave Mr. Booth, however, to speak for himself. He commences very properly by describing what the Gervais apparatus is, and how it has been proposed by M. Dubrunfaut to free it of its more striking defects.

"Z Z, A A, (see fig. 1,) is the perpendicular and central section of a fermenting-

Fig. 1.



tun, with the apparatus affixed to the close head Z Z.

"B is a cone of tinned iron plate, communicating at bottom with the tun, by means of a hole in the cover Z Z.

"C C is a small channel extending round the interior base of the cone, being adapted to receive the condensed '*alcohol* and *essential oils*;' from whence they are conducted, down the small pipe D, into the lower part of the liquor in the vat.

"E E is a cylinder of the same material as the cone which it surrounds, and containing cold water, for the purpose of condensing the vapors which rise into the cone during the fermentation.

"F is an egress pipe, communicating with the interior of the cone. its extremity being immersed to the depth of six inches, at least, below the surface of the water in the small tub G, from whence the incondensable gases are permitted to escape into the atmosphere.

"H is a cock to draw off the water from the reservoir E E, when it becomes warm, and requires to be replaced with cold water, as is the case in high fermentations.

"It is asserted by the French chemists, and conceded by Messrs. Deurbrouck and Nichols, the English patentees, that the vinous fermentation will not commence without the access of atmospheric air or of oxygen; but after it has once begun, the further exposure to the air is unnecessary; and the quantity contained in the empty space (left in the tun to prevent the head from rising into the cone) is, they say, perfectly sufficient to originate the fermentation: but, they add, 'as soon as carbonic acid is evolved from the fermenting gyle, the atmospheric air, being lighter, is driven out from the upper part of the working tun; and as no air is permitted to enter afterwards, all the subsequent carbonic acid gas emitted diminishes the quantity of oxygen contained in the gyle, by the oxygen uniting with the carbon as fast as it disunites from the saccharine matter during its decomposition, and thereby secures a soundness and peculiar mildness not to be produced by any other mode.'

"Never having seen the effects of fermentation in tuns, thus, as it were, hermetically sealed, we cannot personally join in their praise; but we apprehend that there is one inherent defect which will always prevent their general adoption in the British brewery—we mean the tardiness of the progress of the fermentation. From fifteen to twenty days, which it is granted would be requisite for the fermentation of table beer, is a sufficient bar to its adoption. On this principle, we suppose that the Scotch ale brewers, who, even with open tuns, often take three or four weeks to a gyle, would require the whole of their brewing season for a single operation.

"It will be observed in the preceding description of the Gervais apparatus, that the extremity of the *egress pipe* F is immersed in water *to the depth of six inches at least.* These six inches impose an additional pressure upon the surface of the fermenting fluid, equivalent, at an average, to the sixty-fourth part of the whole weight of the atmosphere; and, in consequence, has a material effect in preventing the escape of the carbonic acid, thereby retarding the attenuation. 'In fact,' says M. Dubrunfaut, 'the gas, meeting with a powerful obstacle, which opposes its passage through this condensing apparatus, forces its way by other issues, which it finds in the pores of the wood, and the fissures of the lutes which are recommended to close the joints of the cover of the tun. The portion of the gas which thus escapes, by openings that can never be kept closed under such a pressure, subtracts the alcoholic vapors from the refrigerator, and is a fundamental error in the construction of the Gervais apparatus.' We may add, that had it even been perfect, it was not new: it was nothing more than a combination of two principles which had been long known—the condenser of Jean Baptiste Porto, a Neapolitan, which was described in a work on Distillation, published by him in 1609; and the hydraulic valve of M. D. Casbois, which was announced in a French Journal of Sciences and the Arts in 1783.

"It will naturally be asked, in this place, whether or not the rise in the barometer, to the extent of about half an inch, would not have the same effect on the vinous fermentation as the Gervais apparatus? We say that it would have more: for, in the case of an increased weight of the atmosphere, the pressure all around the tun would be equal to that upon the surface of the liquid. One marked difference would be, that there would be no exit through the pores or chinks of the tun; for these fissures would be equally pressed upon by the external atmosphere. We have been long aware that the variations of the barometer are indicative of alterations in fermentative processes of every kind; and we doubt not that a time will arrive when that instrument will be considered as a necessary appendage to the other instruments which are now consulted by the manufacturers of vinous liquors. Persons who have not attended to this particular subject, (and there are few who have,) can have no conception of the effects of atmospherical variations. Wine-making is confined to a certain season, and to countries where the variation of the barometer is comparatively small; it is in the regions of the north that those effects are more particularly worthy of observation. On this subject we have made many experiments; but what might be useful as suggestions to a scientific manufac-

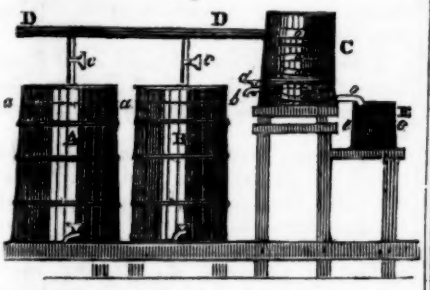
* See New-York Farmer, vol. vii., p. 252.

† The Art of Wine-making in all its branches. By David Booth. To which is added an Appendix concerning Cider and Perry. London: F. J. Mason. 123 pp. 8vo.

turer, would be here out of place. As long as the mind remains doubtful of the facts, they ought not to be given to the world as *knowledge*.

"The author last quoted has proposed a mode of close fermentation, which is free from the errors and absurdities that attach to that of Mademoiselle Gervais; and as it may be useful in the vinous fermentations of this country, and does not interfere with the English patent above mentioned, we take this opportunity of publishing a brief description of the process:

Fig. 2.



"A and B, in fig. 2, represent two of any number of fermenting tuns, which may be arranged and combined on the same principle. They are here re-printed as of the same size, and as placed on the same horizontal level; but these circumstances, though convenient, are not necessary. The lines *a a* and *b b* mark the surface of the *must*, or other fermentable liquid.

"D D is a pipe, communicating with each tun by means of branches, which are inserted through the close head, and which may be stopped at any time, by means of the stop-cocks *c c*.

"C is a cask or other vessel, filled with cold water, through which the pipe D D is continued in the form of a worm, *o o o o o*: this water may be drawn off when too warm by means of the cock *d*, when this refrigerator can be re-filled with cold water, through an opening in the head.

"E is a smaller vessel or tub, destined to receive the product of the condensation of the vapors arising from any or all of the fermenting tuns. Those vapors rising in the branch pipes *c c*, into the main D D, pass through the worm *o o o o o*, which is bent, when it leaves the refrigerator, into the tub E, reaching half-way to its bottom.

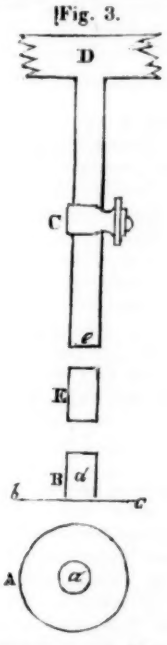
"It will be obvious, from this arrangement, that the condensable vapors which arise with the carbonic acid gas, will, by passing through the refrigerator, be collected at the bottom of the tub E in a fluid form, while the upper part of the tub will be filled with gas. Care must be taken to draw off portions of this fluid from time to time, (by means of a cock in the bottom of the tub, which is not here represented,) so that it may never rise above the level of the orifice of the worm; for were the fluid, for example, to rise to the level *e e*, it would, according to its gravity, form an hydraulic valve, which would cause an additional pressure upon the surface of the fermenting liquid, the prominent objection to the Gervais apparatus.

"On this plan, the complex apparatus for each tun is rendered unnecessary; for a single one of sufficient size will serve for any number of working tuns. The condensed liquid is not hereby returned to cool the fermenting mass; and the distiller, for whom we should suppose the practice well adapted, might carry the liquid from the tub E directly to the still. It may, however, be returned into the mass by a long-stalked funnel, if desired. The worm gives a free passage to the vapors; since its lower extremity, being plunged only in carbonic acid gas, cannot be said to offer any obstruction. The liquid in the tun is then fermented solely under the simple pressure of the atmosphere; and the carbonic acid gas, finding an easy escape through the opening of the worm, no longer seeks to force a passage through the pores of the wood or the chinks of the tun.

"The gas, which, on account of its density, constantly fills the tub E, prevents all risk of absorption of atmospheric air as completely as is done by the hydrostatic valve of Gervais. When there is a range of tuns, one or more will be continually discharging carbonic acid gas; but where there is only a single tun, and that not in full operation, the accession of air could be equally well prevented, for it would only be necessary to fill the tub with water until the surface should rise two or three-tenths of an inch above the lower extremity of the worm, as shown by the line *e e*.

"When we want at any time to look at the state of a tun, we have only to shut the cock *c* (which shuts out all communication with the others), and, opening a plug-hole in the head, draw off what we require by means of the cock at the bottom. In the same manner we may charge and discharge the several tuns successively, without their interfering with one another. Each may be washed out by having a *man-hole* in the upper end; or it may even be taken away and re-placed by another, without retarding the operations of its neighbors. For the more easy performance of this latter purpose, M. Dubrunfaut recommends the following disposition of certain parts in the construction of the apparatus:

Fig. 3.



"Fig. 3 represents, on a larger scale than that of fig. 2, the pieces necessary for the purpose above mentioned.

"B is a tube and flange, seen sideways, of which A is the face, being a circular plate of the diameter of its section *b c*. This piece is fixed by nailing the disc *b c* upon the head of the tun, in such a manner that the opening *a* corresponds with the hole which is made in the head of the tun, for the purpose of allowing the escape of the gas: the tube *d*, of which *a* is an extremity, being of the same diameter as the hole.

"The tube *d*, which is thus perpendicular to the head of the tun, is of the same diameter as the tube *e* of the piece C; and these two tubes, when the apparatus is finished, will be united at their orifices so as to form a single continued pipe. In order to close completely any little openings between their orifices, the cylinder E, the diameter of which is a little larger than that of the tubes *d* and *e*, is drawn over the junction, and its extremities are luted to those tubes so as to prevent all access of air or escape of gas. The piece C is previously united to the larger tube D, which here represents a part of D D, fig. 2. From this disposition of the parts, it is easy to see, that by shutting the cock of the piece C, and pushing upwards the moveable socket E, the tun may be completely disengaged, without affecting any other part of the general arrangement.

"We have dwelt the longer on this subject because of its probable adoption by the distiller and vinegar maker, for whom we should suppose the close fermentation to be better adapted than to the brewer, or even to the foreign wine-maker. The produce will be found to be very various, according to the heat of the fermentation and the quality of the fermenting fluid. At an average, perhaps, it may be estimated at about the two-hundredth part of the quantity of liquid that is fermented; and in quality, chiefly water mixed with a small portion of alcohol, or rather of the immediate materials of alcohol."—pp. 16–23.

☞ See page 320.

Fruit without Kernels, or Seed.—I propose to inquire through the medium of the Register, whether the art of producing stone-fruit without kernel or seed is known to any of your readers—and if such art be known, what is the process by which this very desirable object can be effected. I have twice known late frosts to destroy the greater portion of the kernels in peaches, leaving some unaffected, which produced the fruit in every respect as common, with stone and kernel perfect, whilst the greater part of a sparse crop came to perfect ripeness, with very small stones, which were generally cleft in the growth, and without kernels, and were incomparably more delicious: indeed, so much more delicious, that the fruit having no kernel, growing on trees which generally bore very indifferent fruit, scarcely eatable, was found much more delicious than the fruit with perfect stone and kernel grown on trees that generally bore very fine flavored fruit. Charles Woodson.—[Farmers' Register.]

The Forest Pruner's Golden Rules.—No branches to be cut off which do not interfere with the leader; no wound, thus or otherwise made, to be larger than an inch in diameter; and no pruning in autumn.—[Gardener's Magazine.]

Planting Forest Trees.—The best time for planting acorns, walnuts, as well as peaches, cherries and other stone fruits, is in the fall of the year, as soon as they are ripe. If they are kept long after becoming thoroughly ripe, they are apt to loose their vegetative principle.

ON FATTENING SWINE.—The following excellent article is from the Transactions of the Essex Agricultural Society of Massachusetts.

The feeding and fattening of swine is a subject of great importance to the farmer. Pork furnishes a considerable portion of the animal food consumed in his family, and constitutes in most cases a material item in his marketable produce. The prevailing impression is that the fattening of swine can seldom be pursued with profit to any extent beyond the consumption of the offal of the kitchen, dairy and farm. Some instances have come within our own observation in which it has been attended with serious losses, though it is obvious that the result must depend materially upon the current prices of grain and pork, which are always subject to fluctuations, and do not always bear the same relation to each other. That swine are most useful as general scavengers, eating what nothing else will consume, and that no animal kept on the farm is so profitable in producing manure, and manure of a very valuable character, are circumstances which make a considerable figure on the credit side of their account.

If instances are frequent in which farmers have found the return from the feeding or fattening of swine a very inadequate compensation for the labor and expense, others have come within our observation presenting a different result; and therefore the subject deserves attention, and any actual and careful experiments in relation to it, which have been made, deserve to be encouraged and recorded. In all agricultural subjects, facts which have been carefully established are the most valuable sources of instruction. I shall therefore proceed to detail some which have come under my own observation.

Two intelligent and respectable farmers, one of whose establishments I visited the last winter, gave me an account of their mode of feeding, the process of which I witnessed at the time. I subjoin the account from my agricultural journal.

Dec. 1833.—D. N. is now fattening three swine, whose daily allowance is one peck of meal each. Indian corn, buckwheat, and oats, mixed in equal quantities, constitute their provender. Corn is now worth 84 cts., buckwheat 56 cts., and oats 40 cts. per bushel. One peck of the mixture would cost therefore about 15 cents.

P. C. is now fattening three large swine. Their provender consists of oats and corn in equal quantities ground together. Of this they have more than twelve quarts each per day, stirred in cold water. Corn is worth 84 cts., oats 42 cts. per bushel. Twelve quarts of this provender, making no charge of one sixteenth for grinding, would amount to 24 cts. per day. The last named swine were extraordinarily fine, weighing considerably over 400 lbs. each, when dressed, and were sold for seven cents per lb. What amount of live weight they gained per day is not ascertained: but if we suppose it to be two pounds each per day, and this would be a large gain, it is evident that the returns would by no means equal the expense.

From the Nantucket Inquirer of last autumn, I extract the following account: "A porker was raised in this town the past season, touching which we have the following particulars—weight March 25th, 75 lbs.—weight December 16th, 470 lbs.—increase in 267 days, 395 lbs. or 23½ ounces per day. Average of corn consumed per day, 4½ pints." This is the whole of the account given. It would have been useful to know how the corn was given; whether ground or not ground; whether cooked or not cooked.

John Andrew, Esq. formerly of Salem, informed me that a Mr. Ray, in the interior of New-Hampshire, made an exact experiment in the feeding of swine. He put up sixteen and employed a man, whose exclusive business it was to take care of them, and to whom he gave his board as a compensation for his labor. He fed them entirely upon Indian hasty pudding. Corn at the time was valued at one dollar per bushel. He sold his pork for six cents per pound, and realized a profit of from two to three dollars per hog. In this case it is desirable to know what the hogs actually gained in weight during the process of feeding; how long they were in being fattened; and what was the value of them when first put up. But this information is not attainable.

John Bellows, Esq. of Walpole, put up two swine, 15th Dec. 1833, to be fattened. When put up, one weighed 107 lbs., one 116 lbs. When killed and dressed, 2d April, 1834, one weighed 233 lbs., one 243 lbs. Together with the slops from the kitchen, they consumed, as nearly as could be ascertained, three bushels of raw corn at first, and afterwards twelve bushels ground into meal and the meal scalded, making in the whole fifteen bushels of corn: 223 lbs. live weight at 5 cts., $11 50; 476 lbs. pork, at 6 cts., $28 55. Balance in favor of swine, $17 41—15 bushels corn at 84 cts., $12 60—Profit, $4 81.

The Hempstead (L. I.) Inquirer states that Mr. Doty, of that town, slaughtered on the 23d December, a couple of pigs 14 months old, which weighed as follows: one 611 lbs., the other 578 lbs., making a total of 1189 lbs. These pigs, says the editor, were fed upon apples and milk through the latter part of the summer and one or two of the first fall months. Since it was designed to fatten them, they have been fed upon Indian meal.

Elias Taylor, of Charlemont, an experienced and shrewd farmer, mentioned to me an experiment made by himself in fattening four hogs. He boiled for them three bushels of potatoes, and added to them when boiled one peck of Indian meal—mashed the potatoes with the meal and added cold water. He then left this mixture to ferment; and when it had become sour he fed his swine freely with it. He says his hogs gained surprisingly on this food, and never throve faster; and that they were fed at a small expense. This statement certainly deserves attention, though it is much to be regretted that it was not managed and detailed with more correctness.

The value of fermented food for swine has often been stated and urged. My own experiments in this matter have not been made with sufficient exactness, nor for a sufficient length of time, to authorize me to speak with confidence on the subject, though they incline me to think favorably of it. "The most profitable mode in the estimation of Arthur Young, of converting any kind of corn into food for swine, consists in grinding it into meal, and mixing the latter with water, in cisterns, in the proportion of five bushels of meal to one hundred gallons of water. This must be well stirred several times in a day, for a fortnight, during warm weather, or for three weeks in a colder season, at the expiration of which time it will have fermented and become acid. In this state, and not before, the wash is ready for use; it ought to be stirred every time before feeding, and it will be necessary to keep two or three cisterns fermenting in succession, in order to prevent it being used before it is duly prepared. The difference of profit between feeding in this manner, and giving the grain whole or only ground, Mr. Young adds, is so great, that whoever tries it once will not be induced to change it for the common methods.—[Complete Grazier, p. 267.]

A recent experiment detailed in the British Farmer's Magazine, of November last, corroborates these statements and deserves attention.

"I always," says the writer, Mr. Bolton, "feed my pigs on sour food, which I have invariably found to fat them faster, and make the flesh firmer and whiter, than when given in any other state. The following is my method of preparing it. As soon as the potatoes are steamed I have them, while quite hot, beaten to a pulp, and mixed with bran in the proportion of 28 lbs. of bran to a sack (240 lbs.) of potatoes; and this mixture is put into a vat for ten or twelve days until quite sour; this food makes them fat enough for porkers or small bacons. When I require them more than commonly fat, I begin with 50 lbs. of barley flour, instead of the bran, to each sack of potatoes, gradually increasing the quantity of flour till it amounts to half the weight of potatoes; when the quantity of flour is greater than the moisture of the potatoes will absorb, I add a sufficient quantity of water to make it into a thick paste. I never give it until it has fermented. I send you the result of some experiments to ascertain the weight gained on this food in a given time; and also the proportion which the live and dead weight of some of my pigs bore to each other.

Two pigs put up to feed for thirty days—

No. 1 weighed at putting up 102 lbs.—No. 2, 109 lbs.

Put to feed on potatoes and bran soured, but allowed to run out all the time of feeding; at the end of thirty days they were killed, when No. 1 weighed 158 lbs., gain in 30 days, 56 lbs. No. 2 weighed 172, gain 63 lbs.

No. 1 weighed dead 104 lbs., No. 2 113 lbs., or about 13 to 20.

April 21, 1832, two Berkshire pigs, about seven weeks old, weighed—No. 1, 33 lbs., No. 2, 28 lbs. Killed for bacon, Nov. 19, when No. 1 weighed 419 lbs., and No. 2 404 lbs. Increase, 386 lbs., gain 376 lbs. in 212 days. Dead weight of No. 1, 330 lbs., or in proportion to live as 16 to 20; and of No. 2, 316 lbs., or in proportion to live as 15¾ to 20.

These pigs were never confined, but at all times had liberty to run in a small field with other pigs; they were fed with potatoes and bran floured until the 1st of October, from which time they had, along with two small bacon pigs and some porkers, potatoes and barley flour, commencing with 50 lbs. of flour to the sack of potatoes, and each week increasing the quantity of flour 10 lbs., so that at last they had 110 lbs. of flour to the sack. The small bacon pigs weighed, No. 1, alive 204 lbs., dead 141 lbs.; No. 2, alive

216 lbs., dead 149 lbs.; or in proportion of 14 to 20.

I shall now take leave to detail some experiments of my own in the feeding of swine.

EXPERIMENT I.

Two hogs about one year old, one of them a barrow in very good condition, the other a barrow recently gelded, and in ordinary condition, were put up to be fed exclusively upon Indian hasty pudding or Indian meal boiled with water. We began feeding thus the first of March, 1831, and weighed them again on the 19th of the same month. In the 18 days they consumed six bushels of Indian meal. They were offered cold water to drink, but did not incline to take any.

The result—No. 1 weighed on 1st March, 233 lbs., and on the 19th March, 266 lbs., gain 69 lbs. No. 2, (recently gelded,) weighed 1st March, 190 lbs., and on the 19th March, 247 lbs., gain 57 lbs.

The gain of the two was 93 lbs. in 18 days. The quantity of meal consumed by them was 10 qts. per day to the two. This allows 30 qts. to a bushel, deducting 2 for grinding. The price of corn at the time was 70 cts. per bushel. The expense of the increased weight is 4¼ cts. per lb.

March 21, 1831. Killed the hog mentioned first in the foregoing experiment. Live weight 273 lbs. Weight when dressed 215 lbs. Loss in offal, loose fat included, 59 lbs., or a little more than one fifth.

EXPERIMENT II.

No. 2, mentioned above, weighed, on 23d March 253 lbs., and on 30th April 312 lbs.: gain in 38 days, 59 lbs. No 3, a shoat purchased from a drove, weighed on 28th March, 100 lbs., and on 30th April 151 lbs.: gain in 33 days, 51 lbs. This is a fraction over 1 lb. 8 oz. per day each, nearly 1 lb. 9 oz.

In this case their food was exclusively boiled potatoes mashed with Indian meal. Exact amount consumed not ascertained, but fed as freely as they would bear.

EXPERIMENT III.

The two last named hogs were for the next 20 days put upon Indian hasty pudding exclusively, with the following result: No. 2 weighed on 30th April, 312 lbs., and on 20th May 382 lbs.: gain in 20 days, 70 lbs. No. 3 weighed on 30th April, 151 lbs., and on 20th May 195 lbs.: gain in 20 days, 34 lbs.

The two, in the above named 20 days, consumed four and one half bushels of meal, cooked as above. Meal 78 cts. per bushel. Gain of the two, 104 lbs. in 20 days.

EXPERIMENT IV.

Sundry swine purchased from a drove, and fed with meal and potatoes, washed and mashed. March 28th, 1834—No. 1 weighed 97 lbs., No. 2 134 lbs., No. 3 100 lbs. May 18th, 1831—No. 1 weighed 165, gain in 52 days, 68 lbs.; No. 2 weighed 182, gain 48 lbs.; No. 3 weighed 186, gain 86 lbs.

The two following, raised on the farm, and fed as above. April 25th, 1831—No. 4 weighed 151 lbs., and No. 5 140 lbs. May 19th, 1831—No. 4 weighed 206, gain in 24 days, 55 lbs., and No. 5 weighed 165, gain 26 lbs.

EXPERIMENT V.

In this case it was not intended to force their thrift, but to keep the swine in an improving condition. They were shoats of the last autumn, and were of a good breed.

Tuesday, 3d April, 1833. Put up four shoats, and began feeding them with Indian hasty pudding.

April 3d—No 1 weighed 176 lbs., No. 2 119 lbs., No. 3 150 lbs. April 22d—No. 1 weighed 202 lbs., gain 25 lbs.; No. 2 weighed 153 lbs., gain 34 lbs.; No. 3 weighed 170 lbs., gain 20 lbs. June 25th—No. 1 weighed 264 lbs., gain 62 lbs.; No. 2 weighed 226 lbs., gain 73 lbs.; No. 3 weighed 218 lbs., gain 48 lbs. Total, 183 pounds.

April 3d—No. 4 weighed 121 lbs. April 22d, 145 lbs., gain 24 lbs. Killed May 30.

From 3d April to 22d April, the above swine consumed seven bushels and one peck of Indian meal. From 22d April to 25th June, seven bushels of Indian meal, cooked as above.

One of the above, No. 4, was killed on 30th May; being absent, the live weight was not ascertained.

On the 25th June, the three remaining hogs were weighed, and in the 63 days from 22d April to 25th June, they had gained in that time 183 lbs. as above.

After 30th May, when one of them was killed, one peck of meal made into hasty pudding, with a small allowance of the waste of the kitchen for a part of that time, lasted them three days, that is 22-25 or less than a quart, say 7-8 of a quart per day to each.

At first we employed half a bushel of Indian meal to make a kettle of hasty pudding; but we soon found that a peck of meal by being boiled sufficiently would make the same kettle nearly full of hasty pudding and of sufficient consistency. The kettle was a common sized five pail kettle, set in brick work in the house; and it was remarkable that the peck of meal produced near the same quantity of pudding that we obtained from the half bushel, which showed the importance of inducing the meal to take up all the water it could be made to absorb.

The price of Indian corn was at that time 75 cts. per bushel—30 qts. of meal to a bushel, deducting the toll. The amount of meal consumed in the whole time from 3d April to 25th June, was 14¼ bushels—the cost, $10 69—the total gain, making no allowance for the gain of No. 4 from 22d April to 30th May, which was not ascertained, was 287 lbs.

The gain of No. 1, 2 and 3, from 22d April to 25th June, was 183 lbs. in 63 days; and allowing one peck to serve the three hogs for three days, required 5¼ bushels, the cost of which was $3 94. The live weight could not be estimated at less than 4 cts. per lb. when pork was at market 6 cts.

The value of the 183 lbs. therefore was equal to $7 32, or at 5 cts. to $9 15.

The gain of the swine for the first 19 days, from 3d to 22d April, was—No. 1, 26 lbs. or 1.368 per day. No. 2, 34 lbs. or 1.789 per day. No. 3, 20 lbs. or 1.052 per day. No. 4, 24 lbs. or 1.263 per day.

The gain from 22d April to 25th June, 63 days, was—No. 1, 62 lbs. or 0.984 per day. No. 2, 73 lbs. or 1.158 per day. No. 3, 48 lbs. or 0.761 per day.

The difference of daily gain in the two periods was attributable to the diminished quantity of meal. The question then arises, whether the first mode of feeding was as economical as the second.

In the first 19 days, 7 bushels 1 peck consumed gave 104 lbs. gain. In the next 63 days, 5 bushels 1 peck consumed gave 183 lbs. gain.

Had the first gain been in proportion to the second gain in reference to the meal consumed, the 7¼ bushels which gave 104 lbs. should have given 252 5-7. This great disparity can be explained only in the more economical preparation of the meal, by which a peck, taking up as much water as it would contain, gave a kettle nearly full of pudding, when half a bushel of meal, imperfectly prepared, gave little more. This seems to demonstrate the great advantage of cooking food, both as it respects its increase of bulk and the improvement of its nutritive properties. Whether it would apply to those substances, whose bulk is not increased by cooking, equally as to Indian meal and the like, is a matter which experiments only can determine.

Such are some few trials in reference to the feeding and fattening of swine, which I have made, or information of which I have obtained from other sources, which may at least lead the inquisitive farmer to further experiments and inquiries, on a subject of great importance to his interest. The inferences to be made from them I shall leave to others. The results, as will be observed, are not uniform. The thrift of animals must depend on various other circumstances besides the kinds or the quantity of food given them. Much depends on the breed, as every farmer knows; much on the health of the animal; something on the season of the year. I failed in attempting to fatten several swine in one case, though they were carefully attended and various kinds of feed were tried, and the failure was totally inexplicable until they were slaughtered, when the intestines were found corroded with worms, resembling those found in the human stomach; and this, I have no doubt, prevented their thrift. The same fact has occurred in another instance, and with the same result, I failed in attempting to fatten some other swine, which had been driven a considerable distance, and exposed, probably not even half fed on the road, to severe cold and storms. Some of them were frost-bitten in their limbs; and though attended and fed in the most careful manner, they made no progress for months. In an experiment recently made, of giving swine raw meal mixed with water, I have found a falling off in their gain of nearly one half, compared with giving their food cooked, such as boiled potatoes and carrots, mixed with meal while hot; the result being, in a stye containing a number of swine, as 279 to 500. In respect to confinement or freedom, various opinions are entertained. "Elder Turner, of New-York, says, that hogs should never know what liberty is, but should be kept close all their lives, and as inactive as possible. That by this method double the quantity of pork can be produced with the same expense of feed." (New-York Memoirs of Agriculture, vol. 2, p. 50.)—F. Peabody, Esq. informed me that the Shakers at Canterbury, N. H. told him that they deemed it indispensable to the thriving of their swine that they should have access to water to wallow or wash themselves in; and that they by no means did so well without it. On this point I have had no trial farther than to satisfy myself that fatting hogs are injured by being suffered to root in the earth.

With respect to the age at which it is advantageous to put up swine to fatten, I have only to remark, that it is with swine as with other animals, there are some breeds which

come much sooner to maturity than others. A successful farmer in Saratoga county, N. Y., says that March pigs, killed about Christmas, are the most profitable for pork. Four pigs of what is called the Grass breed, were slaughtered at Greenfield, New-York, which weighed 348 lbs., 318 lbs., 310 lbs., and 306 lbs., at nine months and seventeen days old.

On this point, however, I take leave to present a letter with which I was honored by John Lowell, Esq. whose authority in the agricultural community is justly estimated.

"Boston, April 18, 1831.

"To REV. HENRY COLMAN—

"Dear Sir: I have been prevented by the state of my eyes from answering your inquiries as to my experience in raising old or young pigs. * * * * * I never *wintered* any pigs, as no person resided on my place from Dec. 1st to May 1st. It was therefore matter of importance to me to ascertain on what description of pigs, or rather of what age, the most flesh could be put in my limited time with similar treatment. I may say that I have fully and clearly ascertained, from a trial of 20 years, that young pigs of from 25 to 30 lbs. will give nearly double, in some remarkable cases three times, as many pounds as shoats of 6 months weighing from 100 to 150. I have taken two pigs of 100 lbs. each, age six months, and never was able, between May and November, to get them above 180, rarely above 170. I have taken three pigs of about 30 lbs. each, and on the same food which I gave to the two they would weigh from 170 to 180 each in the same period; nay I have taken pigs of 200, and never could get them to weigh more than 300 in seven months on my food. The way I ascertain the quantity of food is that I never give any thing but the produce of my dairy, and the refuse of the garden, peaches, apples, and cabbage, which are uniform generally.

"3 pigs of 90 wt., or 30 wt. each, will give ordinarily 510 lbs., less original wt. 90, often not more than 60. Gain, 420. 2 pigs of 100 wt. each will ordinarily give 340 lbs. less original wt. 200. Gain, 140 lbs.

"But the 3 pigs of 90 will not consume for the first 3 months half so much as the two of 100 each, and I have kept a 4th and sold it in August for quarter pork.

"There is nothing new or remarkable in these facts. It is the law of the whole animal creation. It is true of the calf and of man. The child of 7 lbs. quadruples its weight in 12 months; and the calf of 60 wt. if fine and well fed, will weigh 600 wt. at the end of the year, and (if a female) will not double the last weight at any age.

* * * * * * *

"Yours, very respectfully,

"J. LOWELL.

"P. S.—It should be remarked that the weight at purchase is live weight, and at sale dead or net weight, because in truth to the owner this is the true mode of considering the subject. No doubt my sort of food is peculiarly favorable to young animals, it consisting in very liberal allowance of milk. If the older pigs were at once put on Indian meal, they would attain to 250 at a year old, but the cost of the meal at 70 cts. per bushel would amount to 9 dollars, and if the first cost, 5 dollars 50 cts. be added, and the pig sold at 6 cts., there would be but 2 dollars gain on two pigs of 100 lbs. each; while three small pigs without meal, fed on milk, would give 24 dollars in the same time. I do not mean to give minute details, but general views. As an important qualification of the foregoing statement, it should be added that shoats of six months bought out of droves have usually been stinted in their growth, and animals, like trees, recover slowly after a check. I presume if shoats were taken from a careful and liberal owner, the difference would be less. But, as a general law, it may be safely affirmed, that, weight for weight at the purchase, the younger animal the greater the positive, and the far greater the net, gain. At least, such is my own experience and belief."

The foregoing letter of this intelligent and practical farmer is entitled to particular consideration. I have one or two other statements which deserve attention. It is stated in the Domestic Encyclopædia, article Soiling, that "twenty-five shoats were fed for three months with green clover cut from less than one acre; they were then fed on Indian corn, and when killed weighed three thousand pounds." This is certainly an extraordinary statement, and I have no other authority for it than what is here given. But the Rev. Thomas Mason, of Northfield, Mass. showed me the 27th Sept. last, three fine thrifty swine about nine months or more old, nine tenths of whose feed, as he assured me, since the 13th of May last, had been obtained from one eighth of an acre of clover cut and given to them green.

The preceding facts and experiments encourage the belief that hogs may be raised and fattened by the farmer to advantage, where corn is worth about seventy cents per bushel, and his pork will bring him six cents per pound. Like almost every other business, especially of an agricultural nature, success must greatly depend on skill, care, selection, and good management. The best swine that I have ever found have been in dairy countries; for there cannot be a doubt that milk and whey for every animal are among the most nutritious of aliments. Indian meal probably ranks next, though many farmers prefer a mixture of provender, such as corn, oats, rye, or barley; but I believe in all cases cooked food will have a decided advantage over that which is given in a raw state: an advantage more than equivalent to the labor and expense of its preparation. Potatoes are a valuable article of food, but the pork is not so good as that fattened upon corn. Carrots are more nutritious than potatoes. Corn given in a raw state or in the ear is a most wasteful management.

Swine ought to be kept on every farm in sufficient numbers to consume all the offal and waste of the dairy and kitchen. If, beyond this, a breed can be obtained which will arrive at early maturity, and which can be advantageously grass fed, or kept at a small expense and in an improving condition through the summer, and being put up to fatten early in autumn, and forced as much as possible so as to be sent to market early in the winter, the farmer will ordinarily find a fair profit in this branch of husbandry. A very great advantage is found in the keeping of swine from the valuable return of manure, both in quantity and quality, which are obtained from them, where care is taken to supply them with raw materials for the manufacture. Too much care cannot be bestowed in the selection of the breed, and the general health of the animal when put up to feed; and it is strongly recommended to every careful farmer, occasionally to weigh the animal and measure the feed, that he may ascertain seasonably on which side the balance of debit or credit is likely to fall. Nothing is more prejudicial to good husbandry than mere guesses and random conjectures; and though the result of our operations may not meet either of our wishes or expectations, an intelligent and reflecting mind will be always anxious as far as practicable to know precisely how far they correspond with or disappoint them. Truth, exact simple truth, in every thing, is the proper pursuit and the most valuable possession of the human mind; and, more nearly than any thing else, connected with man's true interest and happiness.

HENRY COLMAN.

Meadowbanks, Deerfield, April 20, 1834.

CHINESE MULBERRY — SILK MANUFACTURE.—Our readers should remember that this is the season to procure this plant. To delay it until spring may be for years. The following is from the Boston Courier.

The Mulberry seed, furnished to several persons in Massachusetts, by the Missionaries in China, have been extremely prolific, and the prospects are highly flattering for the manufacture of New-England silk. The following extract from an intelligent and enterprising gentleman in Northampton, received within a few days, will be read with interest. "My prospects brighten every day, as it regards the silk business. I receive encouragement from every quarter. Gentlemen of the first respectability, possessed of capital, are ready to engage in it. My trees have grown wonderfully. I shall sell twelve or fifteen hundred dollars worth this season: and shall propagate largely next season, if my life is prolonged. I wish you would come up here and settle yourself down. You would find it a delightful employment to produce so rich a substance from the soil. It is a business which *competition* cannot affect, excepting for the better: for it is a fact, that the more there are engaged in it, the better it will be for each one. The time is not far distant, when New-England will produce SILK *equal in value to the* COTTON *of the South*—of this no one can doubt, who has given any attention to the subject. I have already calls from gentlemen from every quarter, to see my trees and obtain information about the business. I am now planning a building to be erected the coming winter for the feeding of worms—two hundred feet long by twenty-four feet wide, two stories high—which I shall place below the garden next the woods. I have sold one thousand trees to a gentleman for $250, and to others $500 worth more; my number will soon be taken up."

CHIMNEY SOOT AS MANURE.—This article is said to be an excellent manure, if properly applied. It is generally mixed up with earth and dung as a compost; in this state it is worth little or nothing; but when properly applied, by being kept dry, and sown on young wheat, clover, or vetches, in March or April, its effects are most extraordinary; in a few days the yellow sickly plants will assume a dark green, which is as much a test of health in plants as the rosy cheeks of a dairy-maid. The fact is, plants receive

nearly as much nourishment from the air as the roots; and as the soot is throwing off abundance of gases, which are imbibed through the pores of the leaves, it gives a healthful vigor to the plant, and enables it to throw forth its roots to supply nourishment during the stages of blossoming and perfecting the seed.—[Repertory of Inventions.]

Wheat.—Extract of a letter from Maine to the Secretary of the H. F. & H. Agricultural Society:

"My winter wheat is sown between the 1st and 7th of September, (but in the Connecticut Valley may be sown as late as the middle of September.) With the wheat I sow 1½ bushels of oats to the acre—the oats will be a protection to the wheat during the winter and a manure in the spring—sometimes I sow one to two hhds. lime to the acre, and one bushel of plaster of Paris the spring following.

"Last year I made the experiment in my garden of sowing some winter wheat in the spring and cutting it frequently until 1st September, my usual time of sowing wheat; it has succeeded so well that I intend next spring to sow an acre with winter wheat and feed with calves, say 3 yearlings, or animals that will not tread too hard or feed too close until September.

"The advantage looked for is that it will stand the winter better, and be fit to reap earlier than if sown in autumn.

"Have you any of th Black Sea wheat? The heads are large and will be fit to reap some days earlier than our common wheat, and out of the way of rust. Can send you ½ bushel. Have you any of the Skinless Oats? If not, can send you one bushel."—[Hampshire Gazette.]

Large Crops of Rye.—The Editor of the New-England Farmer, after collecting much testimony in favor of early sowing, concludes with the following:

Ephraim Wood, Esq. of Camden, Me. sowed 5 bushels and 3 pecks of rye in September, 1822, on about 5 acres of ground newly cleared of the wood, which produced 240 bushels—over 40 bushels to the bushel sown, and about 48 to the acre. Its being sown early and in good ground occasioned a large number of shoots to spring from one root. In the year 1827, according to the Hampshire Gazette, Linus and Dorus Graves, of Hadley, Mass. had 40 acres of rye in one field, which was so stout and thick that the reaping of one fourth of an acre was considered a day's work. It was estimated that the average product would be about 35 bushels to the acre. The Newburyport Herald stated that Capt. John Sanborn, of East-Kingston, Rockingham county, N. H. raised, in 1830, 357 bushels of winter rye from 7 bushels sown, on 9½ acres of ground; being 51 bushels to the bushel sown, and about 37½ bushels per acre. Mr. Richard Adams, jr. received a premium of $20 from the Massachusetts Agricultural Society, for having raised, in 1830, 38 bushels and 3 pecks of rye from an acre. Mr. Adams Knight, of Newbury, Mass. received a premium of $20 from the Massachusetts Agricultural Society for having raised, in 1832, 45½ bushels of rye on an acre of ground. This rye was sown in August. Mr. Gideon Foster, of Charlestown, Mass. obtained, in 1832, 38 bushels and 2 quarts of winter rye to the acre. Mr. Tristram Little, of Newbury, Mass. raised, in 1832, 45 bushels and 20 quarts to the acre. Mr. N. Smith, of Roxbury, Mass. raised, in 1833, 72½ bushels of rye on 1 acre and 264 rods. Mr. John Keely, of Haverhill, Mass. in 1832, raised from 1 acre and 13 rods, 46 bushels and 3 pecks. Mr. Richard Jaques, of Newbury, Mass. in 1833, raised 35¾ bushels on an acre.

Preservation of Grapes.—It is customary in France to pack grapes for the London markets in *saw-dust*. If the precaution of drying the saw-dust by a gentle heat, before use, be had recourse to, this expedient may answer very well; but if this is not done, and if the wood has been cut fresh, the turpentine, and other odors of the wood, cannot fail to injure the fruit. Oak saw-dust will answer best.

Property on Long Island.—The farm of the Misses Stewart, at New-Utrecht, on the Narrows, about nine miles from the city, and consisting of one hundred acres, was sold by auction last Thursday for $47,000. We understand *a city* is to be built upon it. The situation is very pleasant. The advance in real estate on Long Island, and on Staten Island, within the last year, has been very great.—[Jour. of Com.]

Flies.—It is well known that flies will deposite their eggs on any surface which affords a suitable nidus for them. I remember a gentleman's son who suffered severely from the larvæ (maggots) of a fly, which proceeded from eggs that had been laid in the ear; but the most extraordinary case of this sort which has come to my knowledge occurred in a negro man at Kellitt's estate, in Jamaica. He was a tradesman, and a very intelligent fellow. When I first saw him, his nose and his cheeks were very much swollen, rendering his face hideous; and he suffered much severe pain, I immediately suspected the cause, and soon succeeded in making the residence of the maggots so uncomfortable to them, by application of turpentine and olive oil, with green tobacco juice, up the nostrils, that they came away gradually; but it occupied at least a fortnight before the whole were removed, so deeply lodged were they in the usual passages. I desired a man to keep a tally of the numbers of his tormentors; and he did so, I have no doubt, faithfully; after which he handed it to me, and it is still in my possession. It contains 23 crosses (X) for ten each, and V for five, amounting to 235 larvæ of, I believe, the bluebottle fly. Almost all of them were full grown, and forming, perhaps, such a brood of maggots as never proceeded from any man's head before. Flies abound upon sugar estates; and, when we recollect how often negroes go to sleep in the open air, the wonder is that similar incidents do not occur more frequently.—[Magazine of Natural History.]

Tomato Catsup.—Tomatoes, ¼ peck; salt, a common tea-cup full; strong vinegar, ½ pint; cloves, allspice, and black pepper, a tablespoon full of each; cinnamon, 7 or 8 sticks, each about 6 inches long. Slice and boil the vegetable—pass the mass through a sieve—after which boil all the above together thoroughly—let the catsup stand until cool—then stir and bottle it. This sauce, when well prepared and bottled, may be preserved in good condition two or three years.

Baltimore, August 7th, 1834.

Ringbone in Horses. [From the American Turf Register and Sporting Magazine.]

Frederick, June 5, 1834.

Mr. Editor,—I have never heard of any cure for Ringbone in horses; if any of the readers or subscribers of your useful Register could give some information on this subject, it would be thankfully received by

One of your Subscribers.

Baltimore, June 13, 1834.

Mr. Editor,—One of your Frederick subscribers is desirous of knowing whether there is a cure for ringbone; and as you have referred the question to me, I answer, that as a specific, (if the question applies to the term,) I know of none, and in the term when applied to medicine, I am wanting of faith.

As the answer to this question will meet the eye of the public, I think proper to state what ringbone is, and what are its causes; as in so doing your readers may better judge what probability there is of a cure.

The cause of ringbone is fourfold: 1st, It is hereditary. 2d, Strains. 3d, Bruises. 4th, Wounds. Before I proceed farther, I will notice that ringbone and spavin are one and the same disease, and that their situations first gave rise to the two names; their causes and treatment are the same. Whichever of the four causes may produce the disease, the first effect is inflammation, which extends either to the periosteum, which is the membrane covering the bone, or to the cartilages of the joint. While the disease is only inflammation and confined to the periosteum, a cure is not certain, but may be expected; when it extends to the cartilage, it is doubtful if a cure can be effected.

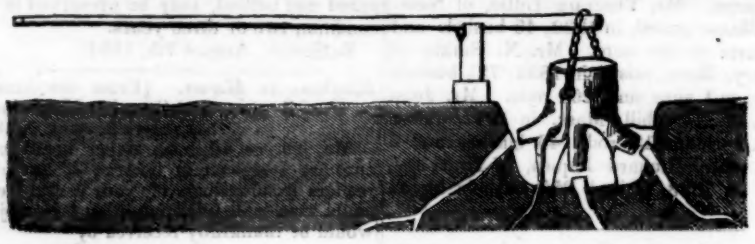
Inflammation of the periosteum excites the lymphatic vessels to increased action, so as to take up a portion of this membrane by absorption, and in its place, and by the arteries, ossific matter is deposited, which in time becomes bone, and, in length of time and continued deposites, forms the enlargement constituting either ringbone or spavin. At the end of bones forming a joint are placed glandulous cartilages, which secrete the synovia or joint oil; these cartilages, when inflamed, secrete less synovia than is usual in a healthy joint; consequently more or less friction is given to parts which ought to have none, and this friction, as it becomes an additional cause of diminished quantity of secretion, becomes the source of greater irritation; as this state of things goes on, the cartilage either becomes absorbed, and in its place ossific matter thrown out, or, by the action of its vessels, what was cartilage in a healthy state is become bone, and anchylosis (a stiff joint) is the result.

Without further detailing on the progress of ringbone, I think I have said enough to show, that if a cure is to be made, the best time is in its recent state; and therefore, if on the seat of ringbone, and in the early stage of lameness, inflammation is discovered, it is advisable to poultice the part with a common Indian meal poultice, applied once a day for about two weeks, after which, blistering, a first, second, or even a third time, may prove beneficial. Should this course fail, firing may with propriety be tried.

Yours, respectfully,

John Haslam, Veterinary Surgeon.

Lockjaw cured by Exposure to Extreme Cold.—Mr. Blanchard, veterinary surgeon of the Third [British] Dragoons, had a horse attacked with complete locked jaw. It was in the winter season, and the weather was extremely cold and stormy. At night he was turned into the barrack yard, and the next morning found perfectly free from the complaint.—[American Turf Register.]



Practical Hints to Emigrants on the Clearing of Lands. By WM. REED. [From the London Mechanics' Magazine.]

SIR,—One of your correspondents, some time back, recommended circular saws for cutting timber or trees down, the saws to be about four feet in diameter! You published also an account of some machines for horizontal cutting, patronised by the Highland Society of Scotland. Now, sir, I have some circular saws of thirty inches in diameter, and these are the largest I ever saw. We make no use of them, however, having no power to spare for driving them. They were made in London, and cost more than ten guineas each, which, considering the difficulty of making them, and that many are spoiled through cracks or flaws in the hardening, was not dear; but as for saws of four feet diameter, it is not likely they could be made, or used when made, as even sixteen-inch saws soon heat and buckle. Supposing, however, these difficulties were got over, how can poor colonists, some with not £5 in their pocket, be expected to lay out ten guineas, or more, for sawing machines? People, with guineas to spare, go not abroad to fell woods. The men that do go are the poor and needy, who, if they would thrive, must work hard, and not stand upon trifles. There must be no staying for this or that; they must make the best shift they can with what comes readiest to their hands. To illustrate what I have said about circular saws, take the following example: When, in 1803, the Golden lane subscription brewery was set on foot, an old shopmate of mine, of the name of Green, was employed there as millwright. Having occasion for some thin deals, but none being at hand, he thought, as he had a two-feet circular saw running, and plenty of three-inch deals, that if they put two cuts through one of these three-inch deals, they would have what was wanted. Accordingly, he and another man set the saw to work, laying on all the power of the engine, which was one of twelve or sixteen horse power; but they found that if they pushed the deal ever so little too fast, it completely stopped the engine. Now, if cutting a three-inch deal with a two-feet saw stops a twelve horse engine, how will two poor men work a four-feet circular saw? No, my emigrant friends, if you have the means of taking out a few tools with you, let them be of the simplest and cheapest sort, such as a good axe, a hand-saw, a cross-cut saw, (for if two men or families unite, they may cross-cut a tree down in less time than by chopping,) a spade, with pick-axe and crow-bar, gimblets, nails, two or three augers, mortice chisels, &c. not forgetting that most useful of all tools, a grind-stone, and two or three triangular files (*vulgo*, three-square,) for sharpening your saws, or they will soon be as useless as a gun without a lock or flint. No time the first year to grub up roots; enough to do to raise, with spade labor, a crop of potatoes, corn, &c. Let the roots rot, or try to burn them in their places, as I have seen German colonists do. When time admits, the following very simple mode of extraction may be adopted. After removing the earth from around the main stump, and cutting the principal branching roots quite through, take a long slender tree, like a scaffolding pole, such as two persons can lift, as a lever; hang two strong hooks with a bit of chain cable, from the short end of this lever; attach these hooks to the under end of the stump; place an upright support at a little distance from the stump, to serve as a fulcrum, (all as represented in the prefixed rough sketch,) and then pull away at the lever with all your might. This will be found a far more simple method than any of the expensive ones recommended by the Highland Society, or others, and, I doubt not, equally efficient. It would be as well, however, to consider before cutting some trees down, whether the tree itself might not be made a lever of to extract the roots. Fir trees, and several others, project their roots but a little way from the surface of the ground, so that by digging a little round the roots, and cutting through the large fibres, many might be pulled down by means of a rope fastened to the top.

I hope some of your more able correspondents will pursue the subject; for when the poor emigrant is far away from help, things do not always turn up so pleasantly as they did with that prince of colonists, Robinson Crusoe.

I am, sir, your obedient servant,

WM. REED.

Peterhoff Paper-Mill, near St. Petersburgh, Jan. 1834.

MANUFACTURING CIDER.—The scarcity of apples makes it unnecessary for us to say much on the subject the present season; still it is very important to have cider of the very best quality. The following, from the Transactions of the Essex County Agricultural Society, of Massachusetts, contains the important directions.

The cider exhibited by Mr. Kimball was of a high order of excellence. It was clear, sprightly, of good color, and of excellent flavor. Mr. Kimball furnished the committee with a particular statement of the manner of making and preserving the cider. By this statement it appears the cider was made about the 20th November, 1832, with eight or nine other barrels, all of which were much alike, and that it is the pure juice of the apple, without any other mixture or ingredient whatever. The fruit was well assorted, and consisted principally of the green sweeting, the baldwin and the pippin apples, and was ground the night before pressing. Particular care was taken in straining the cider, that the straw should be clean and closely packed. The cider remained out of the cellar three or four days after it was made, the weather not being very cold. It was put into new strong casks, and but little air admitted during the winter. It was drawn off the first of April, and put into the same casks after they had been cleansed with water, and a brimstone match. All the cider was sold, with the exception of two barrels, in June and July. The barrel presented for premium was wrapped in woollen blankets by the middle of June. About the middle of August Mr. Kimball sold the barrel of cider not wrapped in blankets, and at this time there was no perceptible difference between the two barrels, except that the one wrapped in blankets was colder than the other. The cellar of Mr. Kimball is of a dry sandy nature, and by the first of July generally gets warm, but he is not sure that cider changes any sooner in such a cellar. Mr. Kimball remarks, that although there may be a difference in cellars in regard to keeping cider, yet his own experience has taught him that the grand essentials in making good cider are good fruit well assorted and in a proper state of ripeness, with clean sweet casks, and proper attention to the admission of air.

SOAP MAKING.—This is a process in which many of our good house-wives experience much trouble and vexation. This arises from their not being sufficiently acquainted with the simple and compound substances which they employ.

When a solution of potash or ley is deprived of carbonic acid, or rendered caustic, it readily combines with animal fat, and forms the compound called soft soap. When both the ingredients are in proper condition, there is no difficulty in making soap.

As soap for the use of farmers' families is more commonly prepared by leaching the ashes, which have been made during winter, we will give such short directions as will enable all house-keepers to make a good article with little trouble.

A barrel with one head is most commonly made use of as a leach; into this, when placed at a suitable height on a board, should be put one peck of fresh burnt slacked lime, and the barrel filled with ashes. Water should be put upon the top, and allowed to filter through until the most of the potash contained in them has been separated. The object in putting the lime at the bottom of the cask, is, that the ley may pass through it, and deprive it of any carbonic acid it may contain, and which would prevent it from combining with the grease and forming soap. When potash is saturated with carbonic acid, it forms pearl-ash or sal æratus, which will not combine with grease; but as lime has a stronger affinity for the carbonic acid than the potash has, it will retain it when leached through it, and allow the potash or ley to run off in its caustic state.

Another cause of failures in soap making is the quantity of salt that is often mixed with the grease; this should be carefully separated by boiling it in a kettle with a quantity of water, by which means the salt will unite with the water, and leave the grease in a proper condition for mixing with the ley. When there is care to free the ley from acid, and the grease from salt, fine soap may be made at the rate of a barrel to every fifteen or twenty pounds of grease.

The strength of the ley, to combine readily, should be such as to float a new-laid hen's

egg; and all that runs after it is of that strength, should either be reserved and put upon the next leach full of ashes, or boiled down until it acquires the specific gravity required.

In order to have soap as mild as possible, there should be as much grease added as the ley will dissolve, in which case the soap will be smooth and salve like, and sooner be convenient for washing than when it is hard or liver like, which last is made by adding about an equal quantity of water to well made soap, and is what the soap-makers call sophisticating it.

Those who would make hard or bar soap for family use, can do it by appropriating a suitable portion of clean made soft soap, into which, while boiling, they should add by degrees common salt, until it undergoes a change or curdles; after which they should allow it to cool, when the hard soap will be upon the top; this may be taken off, and the bottom cleaned from those impurities which will be found adhering to it; cut it into bars for drying, or it may be put into the kettle again with a very little water, and again heated and allowed to cool as before, when it will have become more uniform.

Drill Husbandry — Bone Manure — Flesh colored Clover — Pig-sties.—Bagshot Park Farm is, as usual, beautifully cultivated, and most scientifically and economically managed by Mr. Burness. No one who does not understand the East-Lothian farming can fully appreciate the merits of the system pursued here. All the crops are drilled; and, by the force of bone manure, which is drilled in along with the seeds, good crops are raised on the poorest sand. Mr. Burness sows the Trifolium incarnatum on his wheat stubbles, covering the seed with the harrow, but on no account stirring the ground deeper than 3 inches, and finds a good crop of clover, either for grazing or cutting in the following May. The plants were now from 1 ft. to 18 in. in height, and in full bloom. This clover was also sown by Mr. Hill, a Northumbrian farmer, in the neighborhood of Mr. Donald, and it seems to be considered a valuable addition to our British clovers. It is strictly an annual, and will on no account live through a second winter. In Mr. Burness's parlor, we saw the picture of an ox of the Sussex breed, five years old, fed on the farm without the aid of oil-cake, which weighed 240 stone of 8 lbs., contained 30 stone of fat, and sold for £60. The painting of this ox was by Mr. Steers of High Wycombe. In the farmery are some new sheds for fattening cattle on the plan described by Mr. Newall of Dumfries, in our Encyclopædia of Cottage, Farm, and Villa Architecture. In the breeding pigsties, Mr. Burness has introduced a contrivance for preventing the mother from crushing her sucking pigs against the wall. It is simply a shelf carried round the interior of the sty, about 9 in. wide, and raised about 9 in. from the ground. This shelf prevents the sow from pressing herself against the wall when lying down, and leaves space sufficient between her and it for the pigs to pass. This contrivance, and also a general plan, &c., of these pigsties, will be found in the First Additional Supplement to our Encyclopædia of Agriculture, now in the press. The dry, poor, sandy soil of Bagshot Farm is particularly calculated for being benefitted by bone manure; and Mr. Burness consequently buys a great number of bones. The price he pays for them is 20*d.* a heaped bushel: when ground, they lose about a tenth of their bulk, and the price for a bushel of dust not heaped is 2*s.* The bones, after being ground, are mixed with equal parts of turf ashes or sandy soil, and the mixture is laid in heaps for a fortnight to ferment, before being spread upon the soil. The fermentation which takes place is most powerful, and, if permitted, it would continue for a great length of time; but a fortnight, which is found absolutely necessary, is also found quite sufficient to render the compost fit for agricultural purposes. This necessity of fermenting bone dust, before spreading it on the soil, should not be forgotten by gardeners, when using it in the composition of vine borders (see Mr. Forrest's practice, detailed in v. 502,) or as a general manure. Perhaps bones ground, and mixed with soil, might be found an excellent substitute for tan. Mr. Burness has invented a machine for drilling bone dust along with corn, or turnip or other seeds. It may be made to sow six or eight rows at a time, and the distance between the rows can be varied at pleasure. This drill may be had of Messrs. Cottam and Hallen. In feeding both cattle and sheep, oil-cake is frequently given here. Mr. Burness finds that it does not affect the flavor of beef or mutton in the slightest degree; but that it totally changes the character of the fat of pigs.—[Loudon's Mag.]

Marl in Maryland.—Under the head of "Good News for the Lower Counties," the Editor of the Baltimore Farmer says,

Dr. Ducatel visited our office a few days ago, on his return from his geological survey of the Eastern Shore and Lower Counties of Maryland. He informs us that he has discovered marl in great abundance on the banks of rivers in Calvert and Charles counties, and on the Eastern Shore. If this discovery is turned to its proper use by the farmers, who have it in their neighborhood, it will be of much more value to the country than the gold mines of Georgia and other states, where that mineral has been found, will ever be. If this marl should turn out to be as beneficial to the soil as that with which we have been acquainted for the last fifteen years in the state of New-Jersey, it will, if properly applied, quadruple the value of their land in five years.

There is great variety in the quality of marl; some abounds with undecomposed shell, so as to require burning, and will be little different in its effects from the hydrate of lime; marl of other kinds is composed of disintegrated shells, which have been decomposed by some acid supplied by the earth, and where this acid is the sulphurous, the marl is essentially the same as plaster of paris.

We have known an experiment with the Jersey marl on potatoes—A piece of ground was selected for the purpose; one portion was planted without manure, another with the usual quantity of stable manure, and a third with marl—It is many years ago, and the quantity yielded is not now recollected, but the size of the potatoes in the different experiments is quite fresh in our recollection. Those without manure were little larger than hickory nuts; those with the manure were tolerably fair potatoes, about the usual size; those produced by the marl were very large, and one being weighed reached the weight of 1 lb. 4 oz.

The best way decidedly of using this marl is as a top-dressing on clover, and then turning in the sward while the grass roots are still full of sap.

We have known land that would produce nothing but the poorest pasture, after a dressing with ten cart loads of marl to the acre, produce the following season one and an half tons of hay.

Dr. Ducatel has promised us specimens of the different kinds of marl he has discovered, and we have taken measures to obtain some specimens of the Jersey marl beds, that we may by comparison determine their similarity.

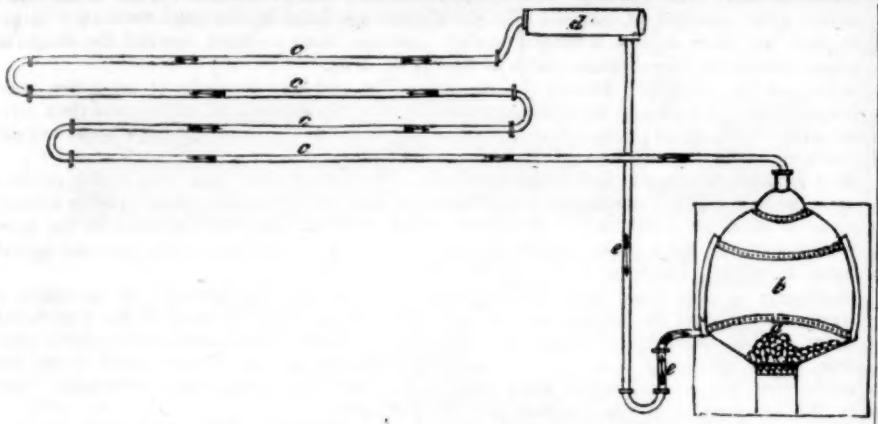
An easy Method of ornamenting the common Flower-Pot.—The pattern is drawn on the pot with a black-lead pencil; and, when the figure is large, it may be cut out in pasteboard, and, being laid on the pot, the pencil may be carried round the edge of the pasteboard as a guide.

The black used is the common varnish, called Brunswick black, which is sold at every oil-shop. It is laid on with a camel-hair pencil, and about a teaspoonful is sufficient for one flower-pot: while using, it should occasionally be diluted with two or three drops of spirits of turpentine. Black sealing-wax dissolved in spirits of wine will also answer, and may perhaps be preferred by ladies, but it is more expensive. E. C.—London, March, 1831.

Complaint among Black Cattle. — Much is said with propriety in the Farmer respecting raising and feeding cattle. There has not been very much written in it, as yet, respecting their maladies. I have recently been in company with a man who has had experience as to their several disorders. Our conversation turned on a pretty common complaint among black cattle, called a wen. His mode of cure is to cast the creature and cut it out; this done, he fills the cavity with rosin and salt well pulverised and mixed, and then carefully brings the skin back to its place and sews it up. He says in this way it will not leave a scar larger than his thumb nail. He wholly objects to putting in a rowell, as it will be long effecting a cure; and if an ox, he will be testy all the time it is in. And it may be so situated as to render it improper to work him for the whole time. A hint by C. D.

Large Calf.—On Tuesday last a calf was killed at the slaughter-house of Mr. Anthony Doebler, in Mifflinburgh, which weighed 333 pounds. The hide weighed 65 pounds. This extraordinary calf was raised by Mr. Solomon Betz, of East Buffalo township, in the county; and was but 4½ months old at the time of slaughter. It is the opinion of those good judges who examined him, that he was the largest and most extraordinary calf ever killed in Pennsylvania; and the Union Cattle Show is bantered to produce such a one at their annual celebration next fall.

Cattle.—Stalled oxen, as they grow fat, being naturally very hot, can scarcely be kept too cool, provided they are dry. Lean cattle can scarcely be kept too warm.—[Lisle.]



Notice of a Hot-Water Apparatus, invented by Mr. John Darkin, Engineer, Norwich.

Having observed a paragraph respecting this apparatus in a Norwich newspaper, we wrote to Mr. Darkin, who, with commendable liberality and promptitude, sent us the annexed letter and sketch. The system adopted appears to be similar to that of Mr. Perkins, but at a temperature not exceeding that of boiling water.

"In reply to your inquiry, I cannot tell whether my hot water apparatus differs from all others in use or not, never having seen a single design of the kind until after I had constructed my own; and since that time I have only read the accounts of those which are described in the Gardener's Magazine. I have derived much amusement from these, from observing that other attempts have been attended with similar difficulties to those which I had to encounter, before I could get this apparatus to act to my wishes. I have great pleasure in sending you a description of it, in order that you may judge of its merits; and if you think it likely to afford additional hints, and to be deserving of a place in either the Gardener's Magazine, or in the Architectural Magazine, it is very much at your service.

"The apparatus consists of a furnace, a boiler, cast-iron tubes of any diameter, an expansion tube, &c. as shown in the accompanying sketch. The tubes may be connected with the boiler, in any way which circumstances require, and carried in any direction, so that they do not descend below the level of the bottom of the boiler. It being understood that a given number of superficial feet of tube will throw off a certain quantity of cubic feet of hot air per minute, it can easily be ascertained by the admeasurement of the house, and the quantity of glass in it, what quantity of tubing is required for it.

"I need not enlarge upon the efficiency and economy of my own plan of warming, as you will be a competent judge of its qualities by my description of it. It certainly has a decided superiority, in every respect, over the common mode of heating by flues, and particularly in retaining *the required temperature* with a small consumption of fuel, and very trifling attention. Boiling water is much to be preferred to steam heat. My own green-house, in which the apparatus is constructed, loses but a few degrees of heat by allowing the fire to go out for six or eight hours in the night. A short time is sufficient to make the water boil again, when it expands and displaces the cold water in the tubes, which are immediately supplied with hot water from the boiler, the cold water retiring through the expansion tube down the returning tube, whence it is heated and again projected forward; thus keeping up a continued circulation of hot water through the tubes for a considerable time, even after the fire has been allowed to die out.

"This apparatus can be applied with the best effect to horticultural and public buildings of every description, mansions, offices, warehouses, drying rooms, &c. &c.; and, as the tubes have no connection with the fire, not a particle of burned air is communicated by them to the room in which they act."—[Loudon's Magazine.]

Apparatus for extracting Caloric by Compression for heating Rooms.

To the Editor of the Mechanics' Magazine:

SIR,—It appears to me most probable that some plan has heretofore been adopted, or proposed, for extracting caloric by compression for heating rooms, &c. I can only say that I have no knowledge of any instance of the kind, nor have I made any experiments on the subject, except on a very small scale, which however have been very satisfactory. I intend, soon as convenient, to construct an apparatus of the following description:

A cylinder six feet long and six inches in diameter, with a permanent partition or cylinder-head in the middle, dividing the interior into two equal parts. In each part of the cylinder is a piston with packing and piston rod, with cross-head and guides, as is usual in steam engines. The two cross-heads are connected with each other by two rods, which extend from the two ends of one cross-head to those of the other, and of such a length that when one piston approaches the centre-head, the other recedes to the opposite end of the cylinder. On one side of the cylinder, and near the centre-head, is a branch, and within the branch a puppet valve, which admits the induction of air, but prevents its escape. On the other side, opposite the first, is a second branch and valve, which permits the air to escape from the first section of the cylinder, but prevents its return. These valves are drawn to their respective seats by spiral springs. Near the second branch, but communicating with the other section of the cylinder, is a third branch, with a cock-valve. From the head of this valve a crank or lever projects horizontally about three inches towards the cylinder. To the end of this lever is attached, by a revit or moveable joint, a rod, which extends to the end of the cylinder, having a hook or catch near the end, which takes to the second cross-head, whenever the second piston is brought forward to the centre-head; and is thereby, when the piston recedes, carried about three inches, thus opening the valve, and is then detached from the cross-head by means of an inclined projection on the lower side of the rod coming in contact with a pin, which for this purpose projects from the end of the cylinder, and the valve is then instantly closed by a spring. Opposite the third branch is a fourth, with cock-valve, lever, and rod; this rod also extends to the end of the cylinder, and the end being bent backward comes within; so that when the second piston approaches the end of the cylinder, it comes in contact with the bent end of the rod, moves it two or three inches, and thus opens the valve: the rod is again brought back to its first position, thus closing the valve by the approach of the cross-head.

To the first branch is attached a pipe, which conducts air to the first section of the cylinder from without: to the second is attached a pipe, which receives the compressed air from the cylinder. This pipe communicates with another, being connected by a flanch or other joint, and having a valve near the joint, which admits the compressed air to the second pipe, but prevents its return. In the same manner the second pipe communicates with a third, and that with a fourth, the order thus extending through any number of pipes, of any convenient dimensions, and any variety of positions, with joints and valves. These are called heating pipes, the last of which communicates with the second section of the cylinder by the third branch. Another pipe is attached to the fourth branch, which conducts the liberated air out of the room.

These pistons are put in motion by wind, water, or other power, the third valve being kept closed, and the fourth being kept open, (which may be done by raising the two rods connected with these valves a little out of their usual positions,) till the air within the heating pipes becomes compressed equal to about twelve atmospheres, when the two rods, being returned to their places, are put in operation. By this arrangement it will be understood that the pistons, being connected, and the expansive force of a portion of the compressed air being applied to the piston, it contributes much, if not most, of the power required for compressing it. Note—In the foregoing description, the cylinder is supposed to be fixed in a horizontal position, but may be either horizontal or vertical, as may be most convenient.

I have not yet had opportunity of ascertaining by experiment what quantity of heat may be thus obtained; but I think I may safely calculate, that about three-fourths of the caloric contained in the air thus compressed will be evolved during its progress through the heating pipes; and that the atmosphere contains at least one hundred degrees of caloric when at the temperature of zero: therefore, if the piston makes one hundred vibrations per minute, and compresses at each one cubic foot of air, it follows that the temperature of the air contained in a room ten feet square may be raised seventy-five degrees in ten minutes; or twenty-four rooms may be kept comfortably warm in the coldest weather. The liberated air must not be permitted to escape within the

room, as it will be intensely cold, and might be employed to advantage in the preparation of ices, or in cooling apartments in warm weather. Yours, very respectfully,

RUFUS PORTER.

Billerica, Mass., Aug. 16, 1834.

On the Application to the Arts of Sir H. Davy's Discovery, resulting from his Electro-Chemical Theory.

To the Editor of the Mechanics' Magazine:

SIR,—It was supposed by Sir Humphry Davy, that instead of affinity being a distinct species of attraction, two substances had a tendency to unite only in consequence of their being in opposite states of electricity. This view of affinity suggested to Sir H. a matter of very great importance—a mode of preventing metals from being acted on by oxygen. The metals are electro-positive, and oxygen electro-negative, and this is the reason, according to Davy, of an affinity existing between them. Now, if by any means the metals can be retained in an electro-negative condition, they cannot suffer oxidation, or, in common language, they cannot *rust*.

The importance of some mode of completely preventing oxidation must be evident to all, since the evil effects of oxygen on articles composed of metal are daily witnessed. The substance employed in rendering iron or steel electro-negative is *zinc*. A very small quantity of this metal applied to any article composed of iron or steel, will completely prevent the action of oxygen upon it, whether exposed to air or water. All articles of cutlery whatever, all iron, steel, or copper instruments used by mechanics, (excepting those which are exposed to fire,) all farming utensils—axes, hoes, sickles, scythes, plough-shares, chains, &c. &c. can be effectually prevented from "rusting" by the application of a very small quantity of zinc, soldered to them in any place where it could be the most conveniently done. The expense of the zinc for this purpose is exceedingly trifling. "A piece of zinc," says Dr. Turner, "as large as a *pea*, or the head of a small round nail, was found fully adequate to preserve 40 or 50 square inches of copper—and this wherever it was placed, whether at the top, bottom, or middle of the sheet of copper, or under whatever form it was used."—[Turner's Chemistry, p. 99. American edition.]

This brilliant discovery of Sir H. Davy's, the result of his *Electro-Chemical Theory*, was first applied to the copper sheathings of ships, which all know are very expensive, and last but a short period, in consequence of their being constantly acted on by oxygen, and the hydro-chloric acid of sea-water. The application of this discovery to the preservation of instruments composed of iron or steel was first suggested by Mr. Pepys; and delicate surgical instruments, which would be rendered useless were their cutting parts in the slightest degree oxidized, are now kept perfectly bright by the application of zinc.

One objection has been made to the application of this principle to the preservation of the copper sheathings of ships, which is, that the copper, when effectually guarded by zinc against corrosion, becomes soon covered with marine plants and animals, which the oxide and submuriate of copper, (formed on the surface of the sheathing previous to the application of the zinc,) completely prevented; and that the copper, being rendered electro-negative by the zinc, attracts substances in the opposite state contained in the sea-water, such as lime and magnesia. But neither the marine plants and animals, nor the lime and magnesia, are capable of injuring the copper; they only form a coating on its surface. When we compare the endurance of these difficulties, admitting that the above objections are well founded, with the short space of time that a copper bottom lasts, and the enormous expense of renewing the copper, they appear as nothing. Besides, it is the opinion of men of science, that by a skilful adjustment of the proportions of copper and zinc, or iron, which can be used instead of zinc on copper, these objections can be completely removed. However weighty these difficulties may be, they are confined solely to the application of zinc or iron to the copper sheathings of ships; they are not made to the application of zinc to metallic instruments.

One more advantage, and perhaps the greatest of all, arising from this discovery of Davy's, is that *iron* can be used instead of copper on the bottoms of ships, thus vastly reducing the expense of sheathing. The zinc as effectually prevents any chemical action on the iron as on the copper, and hence one is as good for the purpose of sheathing as the other.

The numerous experiments which have been made by men of science since this discovery of Sir H. Davy, have fully established its value and importance, and it now remains for men to apply it to some useful purpose.

I am aware of no use having been made of this valuable discovery except in the preservation of ships' bottoms and surgical instruments; and why, I ask, do not mechanics avail themselves of its advantages? It cannot, I think, be possible for any well informed mechanic to be ignorant of any of the facts above stated. If any one is, it must be his own fault. Books are as "cheap as dirt," and if any mechanic will say he cannot buy a few books on science, and that he has no time to study books if he had them, he is poor indeed, and leads a slave's life. Such a man I sincerely pity. But what shall I say to those who *do* understand this principle—this discovery of Davy's—who do not make some application of it? Go into the workshop of the different mechanics, and see their tools undergoing constant corrosion. Go to our wharves, and see all the iron work of ships covered with rust—their anchors and chain cables covered with oxide. Go to the printing office, and see the press red with the oxide of iron—the chases and composing sticks also covered with the same. Look at the steam engine, the most ingenious, useful, and probably the greatest of all inventions, and think whether Sir Humphry Davy's discovery could not be applied to that.

Wherein is the world benefitted by any discovery, if no application be made of it? To what purpose do we rack our brains in acquiring knowledge, if we make no use of it when obtained? People seem afraid to adopt any thing new. Any new invention or discovery, if it be ingenious, they view with delight; but the thought does not seem to occur to them whether it can be applied to any useful purpose; and if any one attempts the application of a new principle, be it what it may, there are thousands ready to laugh at him, as they did at Fulton, in his exertions to show to the world the use and value of that machine of all machines—the *Steam Engine*.

Ships are constantly building and being coppered, without the least regard to this invaluable discovery; and why is it? Are shipbuilders and shipowners ignorant of the existence of this cheap and effectual preventive against the ravages of the elements, or have they tried it and found it ineffectual? If they have, I am not aware of it.

If any of the correspondents of the Magazine will point out any thing new on this subject, many of whom probably can, I, for one, should be highly gratified. A.

EFFECTS OF DARKNESS IN PRODUCING DEFORMITIES.—There is at present in Paris an artist of the Louvre, an eminent historical painter, of the name of Ducornet, who paints with his feet. He was born without arms, of poor parents, at Lille. There are also about the French metropolis a number of beggars, twelve or thirteen of them at least, all deformed in various ways, and all born at Lille, in certain dark caverns under the fortifications. The effect of these places, from their want of light, producing malformed births, is so notorious, that the magistrates of Lille have issued strict orders to prohibit the poor from taking up their abode in them. It is added by the writer, that he had a conversation with Mr. Edwards on the subject, and that gentleman was greatly struck with the confirmation which the above circumstances afford to his views, stated in his work, *Sur l'influence des agens physiques sur la vie*. Mr. Edwards' experiments of detaining tadpoles in darkness, and thus causing them to grow into gigantic and monstrous *tadpoles*, instead of being transformed into frogs, are well known.—[London Medical Gazette, September, 1832.]

TOP DRESSING WITH DRY STRAW.—We have read of statements similar to the following, which we extract from the Farmers' Register.

It is a general practice in this neighborhood to apply the wheat straw dry and unrotted, and often fresh from the thrashing machines, as a top-dressing for the poorest parts of the clover land. It is not laid so thick as to kill the grass, and aids its growth and the fertility of the land so much, that a load of straw used in this manner is thought much more beneficial than if it had been passed through the farm yard, in any of the usual processes of making manure. On the farm described in the report as William H. Meriwether's, (since sold to William L. Craven,) I saw a piece of land thus covered with straw, from which oats, and evidently a very good growth, had been lately reaped. Yet this growth was caused by this dry top-dressing applied after covering in the seed, and of course late, on a spot so worn as to have been otherwise very unproductive. This is certainly a very cheap mode of applying the straw, independent of its alleged (and universally admitted) superior efficacy.

CORN HUSKS FOR BEDS.—As soon as the husks of Indian corn are fully ripe, they should be gathered when they are dry and in a clear air. The outer hard husks are to be rejected, and the softer inner ones to be fully dried in the shade. Cut off the hard end formerly attached to the cob, and draw the husk through a hatchel, or suitably divide it with a coarse comb. The article is then fit to use, and may be put in an entire sack, as straw is, or may be formed into a mattress, as prepared hair is. Any upholsterer can do the work. This material is sweet, pleasant, and durable.

SELECTING SEED.—This is the season for the farmer and gardener to select seed for the fall and spring crops. The fairest and the best seeds should be selected; and to accomplish this, the utmost pains should be taken. For sowing and planting, seeds should be well ripened. Joseph Cooper, Esq., of New-Brunswick, New-Jersey, gives the following directions for corn.

"When the first ears are ripe enough for seed, gather a sufficient quantity for early corn or replanting; and at the time you would wish your corn to be ripe generally, gather a sufficient quantity for planting the next year, having a particular care to take it from stalks which are large at bottom, of a regular taper, not over tall, the ears set low, and containing the greatest number of good sizable ears of the best quality; let it dry speedily; and from the corn gathered as last described, plant your main crop, and if any hills should be missing, replant from that which was first gathered, which will cause the crop to ripen more regularly than is common, which is a great benefit. The above mentioned I have practised many years, and am satisfied it has increased the quantity and improved the quality of my crops beyond what any person would imagine who had not tried the experiment."

APPLICATION OF PLASTER OF PARIS.—As I find many opinions in your publication about the quantity of plaster to be used upon an acre of land, let me say how I have used it. I have applied it every month in the year, varying the application from one to ten bushels per acre. Ten was injurious—one not enough. The best mode of using it is from one to two bushels in September or October, and the same in April or May. The whole amount at either season will not do so well; yet, in either way, a young farmer might be excused if he lost sight of his land marks, and became doubtful of being upon his own old naked farm.—[Farmers' Register.]

The use of gypsum in Connecticut and New-Jersey, near the salt water, is increasing. We fully believe that experience and science will make it a common manure on Long Island.

To the Editor of the Farmers' Register.

EFFECTS OF GYPSUM NEAR SALT WATER.—It has frequently been asserted and generally believed, that plaster of Paris, or gypsum, would not answer as a fertilizer of soils situated on salt water, or within the influence of saline atmosphere. From an experiment made by me this spring, with plaster on clover, I am convinced of its *powerful* effect as a manure on soil under the influence of salt water.

On the 5th of March last, I had plaster strewed on alternate lands, ten feet wide, leaving the intermediate lands unplastered. When the gypsum was applied, the clover had sprung, some of it three or four inches high. The plaster was directed to be strewed at the rate of a bushel to the acre, but from the appearance of it on the land immediately after, I thought it was less, and not sufficient in quantity to do any good, even if the soil were congenial to it. I have been, however, not only disappointed, but agreeably surprised, by the heavy growth of clover, where the plaster was applied; whereas in the lands not plastered, it was indifferent.

From the deep verdant color on the lands which had been plastered, contrasted with the unplastered part, the ground had the appearance of having been mowed every other land. These effects were only visible where the soil was well taken in clover. In some portions of the ground, it had been exhausted, or eaten out by other grasses, it having been in clover three years. On the other grasses which the soil had spontaneously thrown up, I saw no effect produced by the gypsum.

A neighbor, who saw my clover, assures me he never saw so great effect produced by plaster in the county of Frederick, where he resided for some years, and where plaster acts as powerfully as in any part of Virginia.

The land which was the subject of this experiment is distant about a mile from the Rappahannock, where the water is salt, and on the first range of hills above the river low grounds. It is a fertile clay, well adapted to wheat and corn, and capable of producing good crops of either. It has no appearance of being naturally calcareous, nor have calcareous manures been applied to it. I observed in some part of the land, where stable manure had many years ago been abundantly applied, and where the clover was very luxuriant, that the difference between the plastered and unplastered lands was slight; though in these spots there was a difference in the color of the clover. This reminded me of the theory of Sir H. Davy, that probably plaster may be supplied to some soils in sufficient quantities, in manures which contain it. I could upon no other principle account for its want of efficacy in these particular places, than by supposing the soil to have been sufficiently supplied with gypsum, chemically combined with stable manure.

May it not be very questionable as to the effect which saline atmosphere has upon gypsum? *Has it any?** It is advantageously used in some parts of England very near the sea, as for instance in Kent; whereas, it has been found of no service in some situations more remote from the cost. If salt air had the effect of neutralising plaster, would it act any where in Kent? We should say not, when we remember it has been said that the spray of the ocean has been carried, in violent storms, fifty miles from the coast.

Though Davy was not a practical agriculturist, yet his opinions in all that belongs to chemistry, directly or indirectly, deserves weight. He says, "the reason why gypsum is not generally efficacious, is *probably* because most cultivated soils contain it in sufficient quantities." He found gypsum in the soil of Norfolk, Middlesex, and Essex. Lord Dundas informed him, that having tried gypsum without any effect on his estates in Yorkshire, he had the soils examined, when it was found in both of them.

It is not my present purpose to examine into the "cui," or "quo modo" of the efficacy of plaster, but to assert the fact of its effect upon my own land on the Rappahannock.

Should the attention of our landholders in this region of country be called to the use of plaster, and if it be found to act as I am persuaded it will, it may be added to the long list of manures within the reach of almost every farmer in this section of country, such as marl, sea grass, &c. which, if judiciously and perseveringly used, would render agriculture, *with us*, one of the most certain and profitable pursuits of life. R. W. C.

Richmond county, June 17, 1834.

* Since the above was written I have accidentally turned to your "Essay on Calcareous Manures," where you say, page 143, "It is well known that gypsum has failed entirely, as a manure, on nearly all the land on which it has been tried in the tide-water district, and we may learn from various publications, that as little general success has been met with along the Atlantic coast as far north as Long Island. To account for this general failure of a manure, some one offered a reason which was received without examination, and which is still considered by many as sufficient, viz. that the influence of salt vapors destroyed the power of gypsum on and near the sea coast." Who this "*some one*" was, I should like to know; and whether he came to his conclusion by actual experiment or by bold conjecture.

[The opinion referred to by our correspondent, certainly was not founded on experiment, and probably had no better support than "bold conjecture." We believe that it will be found stated (and with approbation) by Mr. Livingston, in the appendix to the article *Agriculture*, in the American edition of the Edinburgh Encyclopædia: but as we have not that volume at hand, it is possible that we may be mistaken.]

FARMERS' LYCEUMS.—We can bear testimony from experience to the following recommendation of social Lyceums. The article is, we believe, from the Baltimore Farmer.

MR. EDITOR,—Some of the most social and instructive evenings I have ever spent were at weekly meetings of twenty or thirty plain practical farmers, held at their own houses, during a few years since. At every meeting some subject of agriculture or domestic economy was selected for conversation and remark at the next meeting. Two Secretaries, appointed for the purpose, recorded the substance of the remarks, which were given orally, and kept on file all written communications.

In the course of one season, two volumes of manuscript were formed from the remarks made, which were, of course, almost wholly of a practical, experimental character. These volumes furnished many articles, which were of the most useful, because of the most practical, character. I have also been interested in State and County Agricultural Societies, but never received one half the entertainment or instruction from all others united, as from these social informal meetings among a few neighbors, and of such a character as could be easily sustained in town, or neighborhood in the country.

Such meetings among farmers receive great additional interest and value from their connection with general Lyceums; embracing, not only farmers, but mechanics, merchants, and those engaged in literary professions. These different classes become mutually beneficial to each other. The clergymen, physicians and teachers, are no less benefitted by the farmers' practical knowledge, than he is by their theoretical sciences.

Museums, or collections of natural and artificial productions, together with books on scientific and practical agriculture, and treatises on general science, would be of the utmost service, in rendering the social meetings of farmers a Farmers' Lyceum.

Such being the fact, every farmer who consults his own pleasure or profit, must see the importance, and the entire feasibility, of his lending his aid to the general establishment of Lyceums in all the counties, towns, and neighborhoods in our Union—for, if he aids in establishing or sustaining one in his own county or neighborhood, he will at least set an example worthy of being followed in every other county and neighborhood in the States.

AGRICOLA.

EXPERIMENTS PROPOSED.—The following hints upon experiments in agriculture have been just received by the committee [of the Saffron Walden Agricultural Society] and printed, in the hope that as it is quite unnecessary, in order to arrive at a practically useful result, that any experiment should be tried upon a large scale, some of the members of the society may turn their attention to the subjects.

The celebrated De Candolle, in his Vegetable Physiology, has pointed out several ways in which persons who are engaged in various scientific or economic pursuits may assist in perfecting the general theory of vegetation. To each class he proposes a separate series of experiments to be undertaken by them; and, among other notices, he lays down a few rules by which an *agricultural* experimenter should direct his researches. We would more particularly refer to the following:

1. That a set of *comparative* experiments should be instituted, in all cases where any positive result may be decided. For instance, if we wish to know the effect which any particular treatment of the soil will produce upon a certain crop, then we should at the same time ascertain what is the effect of the soil under ordinary circumstances upon a crop of the same kind. We should not be satisfied with the results of a single experiment, but

should repeat it on different soils and in different situations.

2. No remarks that are made during the progress of an experiment should be trusted to the memory, but should always be carefully and scrupulously recorded in writing.

3. The experimenter should be careful to state his facts in such scientific or technical terms as may generally be understood, or, if he uses merely local and popular language, he should so explain himself as to be clearly intelligible.

Had attention been paid to these rules, the results of many important experiments would have been available to science which are now no better than lost labor.

De Candolle has particularly alluded to the following experiments, among others, which may be proposed to agriculturists as likely to afford interesting results:

1. To ascertain whether blue vitriol (sulphate of copper) is serviceable in preventing the rust, smut, and some other diseases in corn, which depend upon the attacks of minute fungi.

2. To ascertain the precise effects of gypsum or plaster of Paris (sulphate of lime) in agriculture.

(a) Whether it be equally efficacious, calcined or unburnt, in promoting the growth of green forage, as tares, peas, &c. [*Leguminosæ.*)

(b) Whether it be useful as a manure for any other tribes of plants.

(c) Whether its use hardens the seeds of the Leguminosæ so as to render them difficult to be cooked.

3. To determine, by exact and varied experiments, whether different kinds of corn intermixed in the same field will yield a greater or less produce than when grown in separate fields.

4. To prove by experiments on physiological and chemical principles, (as laid down by De Candolle,) what rotation of crops may be most advantageously adopted on different soils, and what soils, by a rotation of crops, will yield all the advantages of which the alternate system is capable. — [British Farmers' Magazine.]

Hogs—Mackay breed.—In commencing the business of a stock-breeding establishment, it was determined to spare neither pains nor expense, within the bounds of reason and sound discretion, to make the establishment as complete as could be done with the limited means at our command. It is a decided aphorism in the breeding department, that different kinds of stock, and animals of the same kind, but possessing different qualities, forming varieties, are best adapted to different locations, and different views of farmers.

It therefore becomes necessary, in order to answer all the purposes intended by such an establishment as we are desirous of rearing up, to possess all the best and most approved varieties of the several breeds, with which the superior art of breeding has lately enriched Europe and our own country.

In the prosecution of this desirable end, we have added to our stock of improved breeds of hogs another superb variety, called the *Mackay breed.* The history of these fine animals is given us by the gentleman from whom they were purchased. He says, "I purchased the hogs of Capt. John Mackay, of Boston—they are what is called the *Mackay breed.* The competition for the premium on swine, at the Brighton and Concord shows, has been of late years chiefly between this breed and the Bedfords. Capt. Mackay himself has taken on his breed over $200 at the shows in the last six years.

"When Capt. M. followed the sea, he made it a rule to purchase pigs, when he saw those of peculiar good quality, in whatever part of the world they might be, and brought them home to his farm in Weston, near Boston. After he left the sea, he became engaged in rural pursuits, and resolved to see what he could do by crossing his various races of swine, which he had collected on his farm. By perseverance, directed *by good judgment,* he at length obtained what he calls a *distinct breed,* to which the public have affixed his name; and which, for aptitude *to fatten at any age,* large size, &c. are perhaps unrivalled. Capt. Mackay has now quit breeding swine, having sold out his stock.

"The specific characteristics of this breed are, head short and small; chest very broad; back tolerably broad, rather falling below, than rising above a straight line; gammons large; legs very short and tolerably small; constitutions not so hardy as the Bedford, but dispositions more easy and peaceable."

The Weather.—From the valuable table kept by Mr. McAllister, Optician, we have ascertained the following facts in relation to the heat in this city for the last ten years, during the months of June, July, and August. It may hereafter serve as a good table of reference.

The same thermometer, placed in the same situation, and in the shade, has been used during the whole period of time.

The day selected in each month has been that on which the thermometer stood highest at noon, at which hour the record was made.

1824	June 7th	97
	July 2d	95½
	August 9th	90
1825	June 21st	100
	July 22d	100
	August 15th	94½
1826	June 3d	94½
	July 13th	95½
	August 2d	90½
1827	June 20th	90
	July 3d	96½
	August 6th	99
1828	June 28th	96½
	July 24 & 25 each	95½
	August 1st	96
1829	June 20th	92½
	July 23d	96½
	August 14th	92½
1830	June 16th	93
	July 27th	97
	August 16th	94
1831	June 3d	96
	July 23d	96½
	August 17th	93½
1832	June 25 & 26 each	91½
	July 7th	93
	August 7th	93½
1833	June 15th	90
	July 22d	94
	August 14th	89
1834	June 7th	91½
	June 10th	96
	July 8th	98
	July 9th	98½
	July 16th	98
	July 24th	99
	July 26th	97½
	August 5th	95⅞

Average Heat of each month for ten years.

	June.	July.	August.
1824	81.3	86.2	79.8
1825	84.6	88.7	81.7
1826	82.5	85.4	82.7
1827	80.2	86.3	84.5
1828	87.0	87.1	85.8
1829	80.1	84.1	83.3
1830	80.3	87.9	83.0
1831	85.6	86.9	85.4
1832	80.3	84.9	82.7
1833	77.0	83.7	81.1
1834	81.4	89.5	

On Thursday, the 8th of July, between one and two o'clock, the thermometer rose to 100¼. On Tuesday, August 5, at half-past one o'clock, it stood 100¼ degrees, being the warmest day this season.—[Phil. Herald.]

To produce a Great Variety of Seed Potatoes.—Gather in the fall, or as soon as the potato balls, or seed that grow on the vines, get ripe, say about the first frost, any quantity, a good large quantity.

Put the balls in the joints of your fences, on the grass. Cover them with straw, say about twelve inches thick, let them be undisturbed during the winter. In the spring you will have potatoes springing up through the straw. Do not disturb them until the next fall, when the vines decay of their own accord. Then raise up the straw, and you will find small potatoes of every color, name, and quality, that you ever saw. Nineteen different kinds have been found, the product of a half a bushel of potato balls, on ten yards square of ground. Select and plant the next year, and you will have a fine crop, and of the very same kind that you plant. Be careful not to put two different kinds into the same hill. These varieties will last you two or three years; then you had better take a fresh supply from the seed again as above directed. Persevere, and you can obtain an almost endless variety. A Farmer's Son.—[Farmer and Mechanic.]

Pitting Turnips.—As the turnip harvest is approaching, we take the liberty of suggesting to those who cultivate the Swedes, our method of pitting them for winter. These pits are limited to two feet in width, and of an indefinite length, and are dug in a dry situation, seldom more than two feet deep. When the pit or hole is filled with roots as high as the surface of the ground, the turnips are laid by hand, the tops out, and sloping to the centre, until they terminate in a ridge which is generally about two feet above the gound. The whole are then covered with straw and then with earth. The important point follows: The crown of the ridge is then pierced with an iron bar at intervals of a yard, and the earth passed out, so as to leave an entire aperture into the turnips, and into each of these apertures a wisp of twisted straw is loosely inserted. The roots will heat, and unless the rarefied air is permitted to escape, the turnips are apt to rot. The openings permit its escape, without danger of the frost doing injury. With this precaution we have not lost one bushel in a thousand. The same course would no doubt be beneficial in preserving the *Mangel Wurtzel.*

Steam Carriages.—It is said that the experiment made by the Dutch to test the usefulness of steam carriages on common roads, has been completely successful. The roads of Holland are well calculated for this purpose. They are level, and during the reign of Louis Bonaparte they were greatly improved, the principal highways having been paved with hard burnt tiles placed edgeways, thus making perhaps the best highway in the universe.

Corn Pudding. — Mr. Tucker: As this is the season when corn is about maturing, will you allow me to furnish a recipe for making a *Nantucket dish,* which will be found a great luxury to as many of your subscribers as choose to give it a trial.

For an ordinary Family, take two dozen ears well grown sweet corn—cut it from the cob—put it in a mortar and pound it as fine as may be—add, after it is well pounded, one quart of milk, four eggs, one tea spoonful of salt, two spoonfuls of sugar, and thicken with a little flour—put it in tin pans, and bake it until it is well browned on the top. With the addition of sweet butter, as fine a dish is produced as any epicure can wish for. The Nantucket people are as famous for corn puddings as are their sailors for being *whalers.* Truly yours, Nantucket. — [Gen. Far.]

The Art of Wine-Making, &c.

(Continued from page 309.)

On the adulteration of foreign wines, we have the following acute remarks:

"To the inhabitants of this country it is of much less importance to know how any particular species of foreign wine is manufactured, than to learn how to guard themselves from the effects of its adulteration. The following observations may, perhaps, account for an occasional accident, and at the same time may serve as a caution to the bottlers of wine in this country.

"We have already mentioned, that the bottled wines of the Continent (particularly champagne) undergo at least one or two *decantings* or *rackings* in the bottles before they are exported. A *bin* of wine is tried, to see whether or not it is fit for the foreign market. The practice is (especially in the wine of which we speak) to use very fine, that is, elastic corks; to push them half into the bottle; and to press the upper part over the neck, in a sort of girth or rim, which is kept down by means of twisted wire. This cover of the top of the bottle is re-covered with wax of a certain color, and what that color is depends on the substances with which the wax is mixed. If it be yellow, the coloring matter is orpiment; if it be green, the color is usually given by a mixture of orpiment and Prussian blue. Both these coloring matters are poisonous; for orpiment is sulphuret of arsenic, and Prussian blue is formed from one of the most instantaneous poisons —the prussic, or, as it is now termed, hydrocyanic acid.

"Let us suppose, then, that a bin of champagne is intended to be exported, or, if in a British cellar, to be sent to a customer. A bottle is drawn for trial, and is found to be deficient in effervescence. This can be remedied by inducing a new fermentation; and we know that it is the practice to accelerate this desirable quality by means of the introduction of a syrup of sugar candy, mixed and purified with cream of tartar. This addition, which is put into the bottle in proportion to the taste of the customer, is certainly not deleterious. But the cork is drawn, the seal is broken, and a part, perhaps a few chips of the wax, is rubbed off, and enters into the bottle. If the color has been either green or yellow, arsenic also enters; and, unfortunately, the world is but too well acquainted with the consequences. We may also add, that in French cellars the wax has another object in view besides (what is generally thought) the exclusion of the atmospheric air. In that country there are numerous swarms of insects, who are ready to devour the corks, and penetrate to the liquid. As far as regards these insects, the poisonous quality of the coloring matter is not to be regretted."—p. 52.

A danger of a less formidable nature to be guarded against, is the substitution of certain home-made imitations for the genuine products of the continental vineyards:

"Of all the vinous liquids which are manufactured in this country, beer and ale, cider and perry, (and mead and mum, when not banished by excise regulations,) are the only kinds that can be called national. The juices of most of our native fruits possess too little *saccharum* to be fermented pure; and when malt wort, or honey, was formerly added, as sugar has been in late times, the compound was also flavored and colored with extraneous substances, so as to imitate one or other of the favorite wines of the Continent. This was more particularly attended to when the making of 'sweets,' or 'British wines,' became a trade. The imitation of foreign wines originated in fraud, and excise duties raised the imitators to the rank of authorised manufacturers. As long as these gentlemen were contented with the ordinary names of currant wine, gooseberry wine, &c. all was well; but we now see champagne, sherry, port, &c. in the bills of the British wine makers, and we have little doubt that some of these compounds occasionally find their way into the cellars of the 'dealers in foreign wines.' Champagne, in particular, is a very high priced article; and the British champagne, made from gooseberries, if properly made, and drunk when young, may impose upon three-fourths of the purchasers. Perry, also, particularly in mixture, is passed off for champagne, and is, perhaps, not much inferior to the real wine which it imitates. It is not so much the inferiority as *the lie*, which passes a cheaply made article for one that is more expensive, that constitutes the quackery and the crime of those ingenious imitators. If we can make a British wine equal to champagne, we have a right to do so; but we have no right to pass it off *in trade* as a foreign wine."—pp. 61, 62.

In the "Appendix concerning Cider and Perry," Mr. Booth represents the English manufacture of both these liquids to be in a very declining state. His observations on the subject are well deserving of attention:

"We have reason to believe that the superior sorts of perry, as well as of cider, though they may have the same names, are not equal to what were sold for such forty or fifty years ago. Most of the trees that were famed for the excellence of their produce are either dying or dead. Mr. Marshall published his Rural Economy of Gloucestershire in 1789, at which period he laments the decay of the finest fruit trees. 'All the old fruits,' he says, 'which raised the fame of the liquors of this county (Herefordshire,) are now lost, or so far on the decline as to be deemed irrecoverable. The *red streak* is given up; the celebrated *stire apple* is going off; and the *squash pear*, which has probably furnished this country with more *champagne* than was ever imported into it, can no longer be got to flourish; the stocks canker and are unproductive.' The squash pear is described as remarkable for the tenderness of its flesh, which bursts, (or rather burst*ed*,) if allowed to fall ripe from the tree; and hence the name.'—pp. 119, 120.

The pity is the greater, that our British perry is (or rather was) a species of wine particularly worthy of cultivation:

"Perry, when the manufacture has been successful, is much more similar than cider to the sweet wines of the grape. Without any mixture it has often been taken for the best quality of effervescing champagne. The juice, mixed with an equal quantity of a purified syrup of sugar or of honey, of about 25 lbs. gravity, (being allowed to finish its fermentation, so as to be bright before bottling,) is scarcely to be distinguished from a foreign wine of a superior species."—p. 121.

Purple Color.—The purple paper, which comes on loaf sugar, boiled in cider, or vinegar, with a small bit of alum, makes a fine purple slate color. Done in iron.

[*From the Knickerbocker.*]

WORSHIP BY THE ROSE-TREE.

Author of beauty, Spirit of Power,
Thou who did'st will that the Rose should be,
Here is the place, and this is the hour
To seek thy presence, and bow to thee.
Bright is the world with the sun's first rays;
Cool is the dew on the soft green sod,
The Rose-tree blooms, while the birds sing praise,
And earth gives glory to Nature's God.

Under this beautiful work of thine,
The flowery boughs that are bending o'er
The glistening turf, to thy will divine,
I kneel, and its Maker and mine adore!
Thou art around us. Thy robe of light
Touches the gracefully-waving tree,
Turning to jewels the tears of night,
And making the buds unfold to thee.

Thy name is marked in delicate lines,
On flower and leaf that deck the stem;
Thy care is seen, and thy wisdom shines,
In even the thorn that is guarding them.
Now, while the rose that has burst her cup,
Opens her heart and freely throws
To me her odors, I offer up
Thanks to the Being who made the Rose.

H. F. G.

Newburyport, Mass., July, 1834.

Dry Yeast.—The usual method of making good yeast, with strong hop water and flour, is in the first place followed. When this is thoroughly fermented, it is mixed with Indian meal until thick enough to roll out and cut into cakes. It is then exposed to the sun, and while drying undergoes a fermentation in the cakes. When perfectly dried, it is kept for use in a bag, hung up in a dry place. It ferments dough extremely well. A small piece, say 1½ inches square, is sufficient for six pounds of flour. Yeast thus prepared is good for two or three months, but gradually loses its virtue; the fermentation becoming tame as it grows old, and of course less favorable to the quantity of the bread. But there is no trouble in renewing it at any time from the dry cakes. I have myself tried the experiment with entire success, and renewed my yeast from cakes six months old. A method of making dry yeast very similar to this, has been practised by some distillers,—and is also in use in different parts of New-England, and called Turnpike yeast. W.—[New-England Farmer.]

Shoe Blacking.—Perhaps the best in the world is Elder Berries. Mash the berries with your hand in a large kettle of water; set them in the shade a few days, until they ferment; then boil it half a day, filling it up with water. After it is cool, strain and wring them through a coarse cloth, and then boil it down to the thickness of molasses. Put a small quantity with a feather on a brush; rub the shoe till there is a fine gloss. The same will make good writing ink.

Cockroaches.—A gentleman has recently discovered that spirits of turpentine is an effectual remedy against the depredations of cockroaches. He recommends to put a little of it upon the shelves or sides of bookcases, bureaus, armories, or other furniture in which they take shelter, and these troublesome insects will soon quit, not only the furniture, but the room. The remedy is simple, and is easily obtained by every person who wishes it. It is not unpleasant to the smell, soon evaporates, and does no injury to furniture or clothing.

In the year ending Jan. 5, 1833, the quantity of wool exported from Sidney, New South Wales, was 1,334,948 lbs.; in the year ending January 5, 1834, the total quantity exported was 1,784,203 lbs.

Hobart Town papers estimate the total value of articles of colonial produce, exported from Van Diemen's Land in the year 1833, at £152,966, and of the imports, consisting chiefly of British manufacture, during the same period, at £352,864.